

**THE ECONOMICS OF DEVELOPMENT
AND PLANNING**

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8th Revised Edition
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The Economics of Development and Planning

PREFACE TO THE TWENTIETH EDITION

The present edition has been thoroughly revised and substantially enlarged. Part Seven relating to India has been almost rewritten. Besides pruning obsolete data pertaining to India I have made full use of the latest available material and the world, I have Indian and foreign journals, and private and official sources. I acknowledge my sincere thanks to them.

I am indebted to many students and teachers in India and abroad for patronising the book and taking the trouble of making valuable comments and suggestions. I crave the indulgence of more individuals to make further suggestions which shall be most welcome.

I hope this revised and enlarged edition will serve a wide range of students appearing for M.A., M.Com., M.B.A., and other examinations. Candidates appearing in I.E.S., Civil Services, and other competitive examinations will also find this book of immense help.

M.L. JHINGA

PREFACE TO THE FIRST EDITION

This book examines the problems of economic development of underdeveloped countries. There is, however, no dearth of literature on the subject. But it is scattered in journals, reports and doctoral theses. Some of the books on the subject deal with particular aspects of the problems of underdevelopment, while others are in the form of lectures delivered by eminent economists from time to time. There are very few books written in the textbook style. But they are mostly occidental in nature. In certain cases their approach and presentation is abstract and difficult. I have endeavoured to present the subject in a lucid and intelligible manner as possible as in oriental setting.

The book is intended to meet the requirements of M.A. and Honours students preparing for the paper on *Economics of Development and Planning*. It will also prove useful to the candidates for the various competitive examinations. The syllabi of all the Indian Universities and those of the Universities of Leeds, Manchester and London have been consulted for this purpose.

I have drawn heavily on the writings of a vast galaxy of economists who have done much to enrich the subject matter of economic development within the last two decades. However, no amount of footnoting can ever repay the debt I owe to them.

My interest in the subject was aroused when I was a student of the University of Delhi. I had the opportunity to listen to a series of lectures delivered by Dr J.B. Condliffe of the University of California and Mr Maurice Dobb of the University of Cambridge as Visiting Professors.*

I imbibed further interest from the classroom lectures of Professors V K R V Rao, B N Ganguli and Raj Krishna on the different aspects of the subject though it was in its nascent state at that time. I wish to recall my indebtedness to all of them.

I beg to acknowledge my sincere gratitude to the following publishers from whose publications I have borrowed copyright material. George Allen & Unwin Ltd., London; Prentice-Hall, New Jersey, USA; Oxford University Press, New York & London; Macmillan & Co., The Free Press; Yale University Press; Routledge and Kegan Paul, London; John Wiley & Sons, Inc. N.Y.; Orient Longmans; Cambridge University

*J.B. Condliffe, *Technological Progress and Economic Development*, M. Dobb, *Some Aspects of Economic Development*, Delhi 1951.

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No word of gratitude is sufficient to appreciate the encouragement I have been receiving from time to time from my revered teachers, Mr K N Bhattacharya, Professor of Economics, National Academy of Administration, Government of India, Mussoorie and Mr N K Pant, Associate Director in Economics, School of Correspondence Courses, University of Delhi. Without their help this book could not have been possible. Needless to say, I alone am responsible for any errors which may remain.

M.L. JHINGAN

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"The man who never alters his opinions is like standing water,
and breeds reptiles of the mind." *William Blake*

PART ONE
BASIC PROBLEMS

Chapter 1

**ECONOMICS OF DEVELOPMENT: CONCEPTS
AND APPROACHES**

INTRODUCTION

The Economics of Development refers to the problems of the economic development of underdeveloped countries. Though the study of economic development has attracted the attention of economists right from Adam Smith down to Marx and Keynes, yet they were mainly interested in the problems which were essentially static in nature and largely related to a Western European framework of social and cultural institutions. It is, however, in the forties of the present century and especially after the Second World War that economists started devoting their attention towards analysing the problems of underdeveloped countries. Their interest in the economics of development has been further stimulated by the wave of political resurgence that swept the Asian and African nations after the Second World War. The desire on the part of new leaders in these countries to promote rapid economic development coupled with the realization on the part of the developed nations that 'poverty anywhere is a threat to prosperity everywhere,' has aroused further interest in the subject.

But the interest of the wealthy nations in removing widespread poverty of the underdeveloped countries has not been aroused by any humanitarian motive. The most cogent reason for aiding the underdeveloped countries has been the cold war between Russia and the West. Each tries to enlist the support and loyalty of underdeveloped countries by promoting larger aid than the other. Economic development has also an export value for both the aid-giving and aid-receiving countries. In order to avoid secular stagnation, rich countries need an ever-increasing rate of development which must be accompanied by an outlet for the use of their growing capital stock. Poor countries need an accelerating rate of development to increase their export potential for avoiding deficit in balance of payments.

However, a study of the *Poverty of Nations* and the methods of removing poverty cannot be based on the experience of the rich nations. For 'in the advanced countries there has been a tendency to take economic development for granted—as something that takes care of itself and to concentrate on the short-term oscillations of the economy.'¹ Therefore, Myrdal says that the underdeveloped countries should not accept our inherited economic theory uncritically but remould it to fit their own problems and interests.²

Economic Development and Economic Growth

Generally speaking, economic development refers to the problems of underdeveloped countries and economic growth to those of developed countries. Maddison makes the distinction between the two terms in this sense when he writes: "The raising of income levels is generally called economic growth in rich countries and in poor ones it is called economic development."³ But this view does not specify the underlying forces which raise the income levels in the two types of economies. Mrs Hicks points out in this connection that the problems of underdeveloped countries are concerned with the development of unused resources, even though their uses are well known, while those of advanced countries are related to growth, most of their resources being already known and developed to a considerable extent.⁴

In fact, the terms 'development' and 'growth' have nothing to do with the type of economy. The distinction between the two relates to the nature and causes of change. Schumpeter makes the distinction clearer when he defines development as a continuous and spontaneous change in the stationary state which forever alters and displaces the equilibrium state previously existing; while growth is a gradual and steady change in the long run which comes about by a gradual increase in the rate of savings and population.⁵ This view of Schumpeter has been widely accepted and elaborated by the majority of economists. According to Kindleberger, "Economic growth means more output, while economic development implies both more output and changes in the technical and institutional arrangements by which it is produced and distributed. Growth may well involve not only more output derived from greater amounts of inputs but also greater efficiency, i.e., an increase in output per unit of input. Development goes beyond this to imply changes in the

¹Ragnar Nurkse, *Problems of Capital Formation in Underdeveloped Countries*, p.12.

²G. Myrdal, *Economic Theory and Underdeveloped Region*, p. 99.

³A. Maddison, *Economic Progress and Policy in Developing Countries*, 1970.

⁴U. Hicks, "Learning About Economic Development", O.E.P., Feb. 1957.

⁵J.A. Schumpeter, *The Theory of Economic Development*, 1934.

composition of output and in the allocation of inputs by sectors.¹⁶ Friedmann defines growth as an expansion of the system in one or more dimensions without a change in its structure, and development as an innovative process leading to the structural transformation of social systems.⁷

Thus economic growth is related to a quantitative sustained increase in the country's per capita output or income accompanied by expansion in its labour force, consumption, capital, and volume of trade. On the other hand, economic development is a wider term. It is related to qualitative changes in economic wants, goods, incentives, and institutions. It describes the underlying determinants of growth such as technological and structural changes. Development embraces both growth and decline. An economy can grow but it may not develop because poverty, unemployment and inequalities may continue to persist due to the absence of technological and structural changes. But it is difficult to imagine development without economic growth in the absence of an increase in output per capita, particularly when population is growing rapidly.

Despite these apparent differences, some economists use these terms as synonyms. Arthur Lewis in his *The Theory of Economic Growth* writes that "most often we shall refer only to growth but occasionally for the sake of variety, to progress or to développement." These terms will also be used as synonyms throughout this text.

Measurement of Economic Development

Economic development is measured in four ways:

1. GNP. One of the methods to measure economic development is in terms of an increase in the economy's *real national income* over a long period of time. But this is not a satisfactory definition.

"Real national income" refers to the country's total output of final goods and services in real terms rather than in money terms. Thus price changes will have to be ruled out while calculating real national income. But this is unrealistic because variations in prices are inevitable. In this measure the phrase "over a long period of time" implies a sustained increase in real income. A short-period rise in national income which occurs during the upswing of the business cycle does not constitute economic development.

This measure fails to take into consideration changes in the growth of population. If a rise in real national income is accompanied by a faster

¹⁶C.P. Kindleberger, *Economic Development*, 2^e, 1965.

⁷John Friedmann, in *Growth Centres in Regional Economic Development* Hansen, 1972.

growth in population, there will be no economic growth but retardation. The GNP figure also does not reveal the costs to society of environmental pollution, urbanisation, industrialisation, and population growth. Further, it tells us nothing about the distribution of income in the economy.

Moreover, there are certain conceptual difficulties in the measurement of national income which are discussed as under:

(a) First there is the difficulty of defining 'nation' in national income. Every nation has its political boundaries, but in the national income is also included the income earned by the nationals of a country in a foreign country beyond the territorial boundaries of that country.

(b) National income is always measured in money, but there are a number of goods and services which are difficult to be assessed in terms of money, e.g., painting as a hobby by an individual, the bringing up of children by the mother. Similarly, when the owner of a firm gets married to his lady secretary, her services, though a part of national income, are not included in it. By excluding all such services from it, the national income will work out less than what it actually is.

(c) Another difficulty in calculating the national income is of double counting which arises from the failure to distinguish properly between final and intermediate products. There always exists the fear of a good or a service being included more than once. If it so happens, the national income would work out to be many times the actual.

(d) Income earned through illegal activities such as gambling, or illicit extraction of wine, etc., is not included in national income. Such goods and services do have value and meet the needs of the consumers. But by leaving them out, the national income works out to less than the actual.

(e) Then there arises the difficulty of including transfer payments in the national income. Individuals get pension, unemployment allowance and interest on public loans, but whether these should be included in national income is a difficult problem. On the one hand, these earnings are a part of individual income and, on the other, they are government expenditure.

(f) Capital gains or losses which accrue to property owners by increases or decreases in the market value of their capital assets or changes in demand are excluded from the GNP because such changes do not result from current economic activities. It is only when capital gains or losses are the result of the current flow or non-flow of productive activities that they are included in the GNP.

(g) All inventory changes whether negative or positive are included in the GNP. The procedure is to take positive or negative changes in physical units of inventories and multiply them by current prices. Then

this figure is added to total current production of the firm. But the problem is that firms record inventories at their original costs rather than at replacement costs. When prices rise there are gains in the book value of inventories. Contrariwise, there are losses when prices fall. So the book value of inventories overstates or understates the actual inventories.

(h) When we deduct capital depreciation from GNP, the resulting measure is NNP. Depreciation is a charge on profits which lowers national income. But the problem of estimating the current depreciated value of a piece of capital, whose expected life is, say, fifty years, is very difficult. The usual practice on the part of firms is to base their depreciation provisions on the original cost of their assets. When prices of capital goods are changing, the annual depreciation provision will then measure the cost of using fixed assets for some fifty years (i.e., the time when the assets were bought) rather than the current cost of using them. Unlike inventories, a depreciation valuation adjustment is full of statistical difficulties, such as the age-composition of the whole capital stock, and changes in prices of capital goods every year since the assets were bought.

(i) Moreover, the calculation of national income in terms of money is the underestimation of real national income. It does not include the leisure foregone in the process of the production of a commodity. The incomes earned by two individuals may be equal, but if one of them works for longer hours than the other, it would be correct to some extent to say that the real income of the former has been understated. Thus national income does not take into consideration the actual cost of production of a commodity.

(j) In calculating national income, a good number of public services are also taken which cannot be estimated correctly. How should the police and military services be estimated? In the days of war, the forces are active, but during peace they rest in cantonments. Similarly, to estimate the contribution made to national income by profits earned on irrigation and power projects in terms of money is also a difficult problem.

Moreover, the emphasis on GNP as the index of economic growth is based on the application of the experiences of the developed countries on the underdeveloped countries which differ radically from the socio-economic set-up of the former. An OECD Report emphasises in this connection that the developed countries "took for granted that the GNP growth, largely concentrated in the industrial sector, would bring with it automatically full employment and eradication of the poverty" it had seemed to do for them. They failed to remember that during the period of early industrialisation, population growth was slow.

gy quite labour-intensive, emigration was relatively easy if people could not find a job, and there was no competition from already highly industrialised societies or restrictions by them on access to their markets.¹⁸ Unfortunately, economists in underdeveloped countries and their Western advisers have viewed economic development in such countries as structural transformation whereby the share of agriculture declines and that of manufacturing and service sectors increases in GNP. Accordingly, they have laid stress on such development strategies which aim at rapid industrialisation along with urbanisation at the cost of rural and agricultural development. So far as the solutions of such problems as poverty, unemployment and income distribution are concerned, they have been given secondary importance. This is because it is thought that with increase in GNP such problems will be automatically solved in the long run.

Though underdeveloped countries lack in satisfactory indicators and data, yet they show a strong correlation between the extent of poverty and GNP per capita. Few would dispute that poverty is both the cause and result of economic growth. Poor people can make little contribution to the economic growth of the country. On the other hand, development strategies which lay more emphasis on industrialisation and neglect the poor cannot raise the long-run growth rate of economy. As a matter of fact, experience in the underdeveloped countries during the three Development Decades has shown that the increase in GNP/GNP per capita has accentuated the problems of poverty, unemployment and inequalities in such countries. Therefore, GNP cannot be regarded as a perfect indicator of economic growth.

2. **GNP Per Capita.** The second measure relates to an increase in the *per capita real income* of the economy over the long period. Economists are one in defining economic development in terms of an increase in per capita real income or output. Meier defines economic development "as the process whereby the *real per capita income* of a country increases over a long period of time." This indicator of economic growth purports to emphasize that for economic development the rate of increase in real income should be higher than the growth rate of population. But difficulties still remain.

An increase in per capita income may not raise the real standard of living of the masses. It is possible that while per capita real income is increasing, per capita consumption might be falling. People might be increasing the rate of saving or the government might itself be using up the increased income for military or other purposes. There is another possibility of the masses remaining poor despite an increase in the real

¹⁸ OECD, *Development Cooperation 1973 Review*, 1973. Italics mine.

national income if the increased income goes to the few rich instead of going to the many poor. Moreover, such a measure subordinates other questions regarding "the structure of the society, the size and composition of its population, its institutions and culture, the resource patterns and even distribution of output among the society's members."

3. Welfare. There is also a tendency to measure economic development from the point of view of economic welfare. Economic development is regarded as a process whereby there is an increase in the consumption of goods and services of individuals. According to Okun and Richardson, economic development is "a sustained, secular improvement in material well-being, which we may consider to be reflected in an increasing flow of goods and services."⁹

This indicator is also not free from *limitations*. The first limitation arises with regard to the weights to be attached to the consumption of individuals. Consumption of goods and services depends on the tastes and preferences of individuals. It is, therefore, not correct to have the same weights in preparing the welfare index of individuals.

Second, in measuring economic welfare caution has to be exercised with regard to the composition of the total output that is giving rise to an increase in per capita consumption, and how this output is being valued. The increased total output may be composed of capital goods. It may be at the cost of a reduced output of consumer goods.

However, the real difficulty arises in the valuation of the output. The output may be valued at market prices whereas economic welfare is measured by an increase in real national output or income. In fact 'with a different distribution of income, prices would be different and both the composition and value of national output would also be different.'

Third, from the welfare point of view we must also consider not only what is produced but how it is produced. The expansion of real national output might have raised the real costs (pain and sacrifice) and social costs in the economy. For instance, the increased output might have resulted from long hours and in the deterioration of the working conditions of the labour force.

Last, we cannot equate an increase in output per head with an increase in economic welfare, let alone social welfare without additional considerations. To specify an optimum rate of development we must make value judgments regarding income distribution, composition of output, tastes, real cost and other particular changes that are associated with the overall increase in the real income.

4. Social Indicators. Dissatisfied with GNP or GNP per capita as the measure of economic development, certain economists have tried to

⁹O Okun and R W. Richardson, *Studies in Economic Development*, p. 230

measure it in terms of "social indicators." These include health, food and nutrition, education including literacy and skills, employment, conditions of work, consumption of basic necessities, transportation, housing including household facilities, clothing, recreation and entertainments, social security, etc. All these indicators emphasise on the quality of the development process.

But problems arise in constructing a common index of development relating to these social indicators. First, there is no unanimity among economists as to the number and type of items to be included in such an index. For instance, Hagen,¹⁰ and UNRISD¹¹ use eleven to eighteen items with hardly a few common. On the other hand, Morris D. Morris uses only three items, i.e., life expectancy at birth, infant mortality, and literacy rate in constructing a "Physical Quality of Life Index" relating to 23 developed and developing countries of the world for a comparative study. Second, there is the problem of assigning weights to the various items which may depend upon the social, economic and political set-up of the country. This involves subjectivity. Morris D. Morris¹² assigns equal weights to the three indicators which undermines the value of the index in a comparative analysis of the different countries. If each country chooses its own list of social indicators and assigns weights to them, their international comparisons would be as inaccurate as GNP figures. Third, social indicators are concerned with current welfare and are not related to the future. Fourth, the majority of indicators are inputs and not outputs, such as education, health, etc. Lastly, they involve value judgments. Therefore, in order to avoid value judgments and for the sake of simplicity, economists and UN organisations use GNP per capita as the measure of economic development.

Meaning of the Term 'Underdeveloped'

The term 'underdeveloped' has been used in a variety of ways. 'Undeveloped' and 'underdeveloped' countries are often used as synonyms. But these two terms are easily distinguishable. An undeveloped country is one which has no prospects of development. An underdeveloped country, on the other hand, is one which has no potentialities of development. The Antarctic, the Arctic and parts of the Sahara may be termed as undeveloped, while India, Pakistan, Uganda, Columbia, Panama, etc., may be called underdeveloped. "Poor" and

¹⁰E.E. Hagen, "A Framework for Analysing Economic and Political Development", in *Development of Emerging Countries*, (ed.) R.E. Asher, 1962.

¹¹United Nations Research Institute for Social Development (UNRISD), *Contents and Measurement of Social Economic Development*, 1970.

¹²Morris D. Morris, "A Physical Quality of Life Index", in *The United States and World Development Agenda 1977*, (ed.) J.W. Sewall, 1977.

"backward" are also used as synonyms for "underdeveloped". A poor country does not mean a young country. Poverty simply refers to the low level of per capita income of a country. It has nothing to do with the country's culture. 'Backward countries' is a static term like the term 'underdeveloped'. So the terms poor and underdeveloped are interchangeable. A more respectable term "developing countries" has also come to be used in economic literature. However, Bauer regards the expressions underdeveloped, developing and less developed as clearly euphemisms. The terms underdeveloped and developing are especially inappropriate euphemisms: *underdeveloped* because it so clearly suggests that the condition it describes is abnormal, reprehensible and also perhaps readily rectifiable. The term *developing* because its use leads to such contradictions as references to the stagnation or retrogression of the developing world. According to him poor or materially backward are the most appropriate expressions.¹³ The World Bank uses the term developing countries and divides them into low income and middle income countries. Middle income countries are further divided into oil exporters and oil importers. Of late, a new term '*Third World*'¹⁴ is being used. We shall be using all these terms interchangeably throughout the text.

Different Criteria of Underdevelopment

It is rather difficult to give a precise criterion of underdevelopment. Underdevelopment can be defined in many ways: by the incidence of poverty, ignorance, or disease, by *maldistribution* of the national income, by administrative incompetence, by social disorganization.¹⁵ There is thus not a single definition which is so comprehensive as to incorporate all the features of an underdeveloped country. Still some of the criteria of underdevelopment are discussed below.

1. The first criterion of underdevelopment is the *ratio of population to land area*. But it is very difficult to ascertain whether a high or a low ratio of population to area is an indicator of underdevelopment. There are many underdeveloped countries in Africa and Latin America where there are "empty spaces" signifying a low ratio. While there are a number of other underdeveloped countries like India, China, Burma, Pakistan, Malaysia and many other South Asian countries which have a

¹³P T Bauer, *Dissent on Development*, 1973.

¹⁴The African, the Asian and the Latin American member countries of the United Nations prefer to call themselves collectively as the 'Third World'. They do so to distinguish themselves from the economically advanced capitalist countries of the 'First World' and the socialist countries of the 'Second World'.

¹⁵Hugh L. Keenleyside, "Obstacles and Means in International Development", in *Dynamics of Development*, (ed.) G. Hambridge, p. 8.

high ratio of population to area. This criterion is, therefore, vague and superfluous.

2. Another indicator of underdevelopment is the ratio of industrial output to total output. It may also be explained as the ratio of industrial population to total population. According to this criterion, countries with a low ratio of industrial output to total output are considered underdeveloped. But this ratio tends to increase with the increase in the per capita income. Therefore, the degree of industrialization is often a consequence rather than a cause of economic prosperity in a country. In countries where agriculture is developed, tertiary or service industries tend to grow spontaneously because increasing disposable agricultural surplus creates demand for the products of the industrial sector. But when the disposable surplus agricultural income is used to subsidize uneconomic urban industry, the overall per capita income would tend to be lower.¹⁶ Thus, this criterion is not a valid indicator of underdevelopment.

3. The third criterion of underdevelopment is the *low ratio of capital to per head of population*. Nurkse defines underdeveloped countries as those which "compared with the advanced countries are under-equipped with capital in relation to their population and natural resources."¹⁷ But dearth of capital is not a satisfactory criterion of underdevelopment for the following reasons: (a) Capital deficiency is not related to the absolute size of a country's stock of capital but to the ratio of capital to population or to some other factor. (b) The Principle of Marginal Productivity tells that where the ratio of capital to other factors is low, the marginal productivity of capital is high. But it is difficult to infer from this that in underdeveloped countries marginal productivity of capital is high since capital is scarce, or that a high marginal productivity of capital suggests a scarcity of capital. It is possible that poor organisation, low skills, unfavourable weather, etc., may tend to keep the marginal productivity of capital low in underdeveloped countries. (c) Moreover, if capital deficiency is taken as an indicator of underdevelopment, other socio-economic factors are neglected. As Nurkse himself says, "Economic Development has much to do with human endowments, social attitudes, political conditions and historical accidents. Capital is a necessary but not a sufficient condition of progress."

4. Another criterion indicates towards *poverty* as the main cause of underdevelopment. Staley defines an underdeveloped country as one

¹⁶J. Viner, "The Economics of Development", in *The Economics of Underdevelopment* (ed.) A.N. Apparwal and S.P. Singh, pp. 11-12

¹⁷Op. cit., p. 1.

"characterised by mass poverty which is chronic and not the result of some temporary misfortune and by obsolete methods of production and social organisation, which means that the poverty is not entirely due to poor natural resources and hence could presumably be lessened by methods already proved in other countries."¹⁸

This definition points towards some of the important characteristics of underdeveloped countries. That underdeveloped countries have unexploited natural resources, scarcity of capital goods and equipment, obsolete techniques of production and defects in socio-economic organisation, none can deny. But it does not lay emphasis on the basic criterion of underdevelopment, viz., low per capita income. As Barbara Ward says, "Perhaps the most satisfactory method of defining poverty is to discuss the question simply in terms of per capita income—the average income available to citizens in the various countries."¹⁹

5. Thus one of the most commonly acceptable criteria of underdevelopment is the *low per capita real income* of underdeveloped countries as compared with the advanced countries. According to the United Nations experts, "We use it (the term underdeveloped country) to mean countries in which per capita real income is low when compared with the per capita real incomes of the United States of America, Canada, Australia and Western Europe." But such definitions which explain an underdeveloped country in terms of the low per capita level of income can by no means be considered adequate and satisfactory. For they focus attention only on one aspect of underdevelopment, viz., poverty. They do not analyse the causes of low consumption levels, of inhibited growth and of the development potential of an underdeveloped economy. Moreover, "being underdeveloped in the technical sense means nothing in terms of the level of civilization, culture or spiritual values."²⁰ Serious difficulties also arise while measuring per capita national incomes in underdeveloped countries and their comparison with the per capita incomes of the advanced countries. The data on per capita national income are often inaccurate, misleading and unreliable due to the following reasons:

(a) There is a substantial non-monetized sector in underdeveloped countries which makes the calculation of national income difficult. A great deal of what is produced in the subsistence sector is either exchanged for other goods or is kept for personal consumption. This tends to underestimate the national income.

(b) There is the lack of occupational specialization in such countries.

¹⁸E. Staley, *The Future of Underdeveloped Countries*, p. 13.

¹⁹The Rich and Poor Nations.

²⁰B. Higgins, *Economic Development*, p. 7.

which makes the calculation of national income by distributive shares or by industrial origin difficult. Besides the crop, farmers often produce a variety of products like eggs, milk, articles of clothing, etc., that are never included in the national income estimates.

(c) In underdeveloped countries people are mostly illiterate and do not keep any accounts, and even if they do, they are reluctant to disclose their income correctly. In such a situation only rough estimates are possible.

(d) National income estimates include only those goods and services which are commercially used. But in underdeveloped countries people living in rural areas and manufacturing articles of consumption from rudimentary goods are able to avoid many expenses. They build their own huts, garments and other necessities. Thus in underdeveloped countries, relatively fewer goods are channelised through the market, and therefore are not included in the national income estimates.

(e) The computation of national income in terms of money underestimates the real income. It does not include the real cost of producing an article, the effort or sacrifice of leisure *foregone* in the process of production. The income earned by two persons may be the same, but if one works for longer hours than the other, there is some justification in saying that the real income of the *former* is underestimated.

(f) National income estimates fail to measure adequately changes in output due to changes in the price level. Index numbers used to measure changes in the price level are simply rough approximations. Moreover, the price levels vary in different countries. Consumers' wants and preferences also differ in each country. Therefore, the national income figures of different countries are often misleading and incomparable.

(g) International comparisons of national income are inaccurate due to exchange rate conversion of different currencies into a common currency, i.e., US dollars. The use of a single currency unit for computing the total output of goods and services underestimates the national incomes of underdeveloped countries as compared with the developed ones. The rates of exchange are primarily based on the prices of internationally traded goods. But there are many goods and services in underdeveloped countries that are never traded internationally and are also priced low. "It is contended that approximately correct results can be obtained only when there exists an equivalence between the prevailing exchange rates and the relationship of internal prices. The equivalence is unlikely to be achieved for most countries today in view of the prevalent use of exchange controls and quantitative restrictions on trade." This makes international comparisons of national incomes misleading and superfluous.

(h) The calculation of per capita income in an underdeveloped

country is likely to be understated or overstated due to unreliable and erroneous population figures. The census data are never accurate in such countries.

(i) Above all, difficulties arise in the definition of income, in the differences in concepts used for the computation of national income in various countries and calculating the contribution to national income of such governmental activities as irrigation and power projects, police and military services, etc.

Despite these limitations, the per capita income is the most widely used measure of the level of economic development.

DEVELOPMENT ECONOMICS IN RETROSPECT²¹

Over the past thirty years, development economics has undergone many changes. The emphasis has shifted from growth in GNP per capita to the creation of employment, to redistribution of income, and to basic human needs.

GNP Per Capita In the 1950s and 1960s, economic development had been identified with the growth of GNP/GNP per capita. The United Nations in a resolution set the target growth rate of 5 per cent in GNP of LDCs for the development decade of the 1960s. To achieve the targeted growth rate, economists in the LDCs suggested rapid industrialisation along with urbanisation. This view was based on Rostow's thesis of the stages of growth, whereby development proceeded along a linear path through a number of stages. The most important stage which caught the fancy of LDCs was the "take-off". So far as the problems of poverty, unemployment, and income distribution were concerned, they were given secondary importance. It was believed that the gains from the growth of GNP would automatically "trickle down" to the poor in the form of increased employment and income opportunities.

This linear view was further strengthened by the Nurksian dictum of "vicious circles" of low savings, small markets and population pressures. It was believed that the removal of these vicious circles would set free the natural forces which would lead to higher growth. For this, Rosenstein Rodan advocated the Big Push, Nurkse, the Balanced Growth, Hirschman, the Unbalanced Growth, and Leibenstein, the Critical Minimum Effort. But greater emphasis was laid on international aid to provide the "missing components" in the form of capital, technical know-how, foreign exchange, etc. The rationale behind foreign aid was the "two-gap model" and industrialisation via import

²¹Based on a paper presented at the 4th Haryana Economic A² held at Atma College, Panipat on 10-11 March 1994

substitution so that aid might be gradually dispensed with by the LDCs.²²

David Morawetz's estimates show that as a result of the adoption of these development strategies, the GNP per capita of the developing countries grew at an average rate of 3.4 per cent per annum during 1950-75. This was faster than what either the developed countries or the LDCs had grown in any comparable period prior to 1950, and exceeded both official goals and private expectations.²³ But the growth of GNP per capita failed to solve the problems of poverty, unemployment and inequalities in such countries.

The criticism against GNP as an index of economic development had been gaining momentum among economists in the 1960s but the first public salvo was let loose by Dudley Seers in his presidential address at the Eleventh World Conference of the Society for International Development held in New Delhi in 1969. He posed the problem thus: "The questions to ask about a country's development are therefore: What has been happening to poverty? What has been happening to unemployment? What has been happening to inequality? If all three of these have declined from high levels, then beyond doubt this has been a period of development for the country concerned. If one or two of these central problems have been growing worse, especially if all three have, it would be strange to call the result 'development' even if per capita income doubled." Robert McNamara, the then Governor of the World Bank, admitted in February 1970 the failure of the GNP growth rate as an index of economic development in the LDCs in these words: "In the first Development Decade, the primary development objective, a five per cent annual growth in GNP, was achieved. This was a major accomplishment. But this relatively high rate of growth in GNP did not bring satisfactory progress in the development. In the developing world, at the end of the decade: malnutrition is common, infant mortality is high, life expectancy is low, illiteracy is widespread, unemployment is endemic and growing, the redistribution of income and wealth is severely skewed."

Since the 1970s, the emphasis has shifted from the growth rate in GNP to the quality of the development process; of progressive reduction in absolute poverty, unemployment and inequalities. All those engaged with the development process now give attention to three different, though largely complementary, strategies: increasing employment, reducing inequalities in income and wealth, and meeting basic human needs.

²²All concepts, theories and models mentioned in this section have been discussed in subsequent chapters in the book.

²³*Twenty-Five Years of Economic Development, 1977*

Employment Creation. During the 1950s and 1960s, the LDCs had high rates of growth of industrial production and of economic growth, but these growth rates failed to create enough employment.

It was in 1954 that Arthur Lewis²⁴ advocated that the problem of unemployment in the LDCs would be solved automatically with the movement of the subsistence and landless labourers to the higher-wage urban capitalist industries. This process would increase inequalities in the early stages of growth but when the growth process gains momentum the rural unemployed workers would be absorbed in the modern capitalist sector, and both unemployment and inequalities would be removed. The Lewis view continued to prevail in the LDCs for almost two decades but it failed to solve the problem of unemployment due to three reasons: (a) Population and labour force grew at a faster rate than expected; (b) the gap between the capitalist wage and the subsistence wage was much higher than assumed by Lewis due to wage differentials and trade union influences in urban areas; and (c) the LDCs adopted labour-saving technologies in the urban capitalist sector which increased output per man without creating additional jobs.

So employment has become a major policy issue of the LDCs and international agencies since the 1970s. The emphasis has shifted from output or growth approach to income or poverty approach to the employment problem which lays emphasis on the quality rather than on the quantity of employment. Industrial development having failed to provide larger employment opportunities, increasing attention is being paid on the adoption of employment generating schemes specifically directed towards the urban and rural poor so as to increase their productivity and incomes.

Income Inequality. In the 1950s and 1960s, the thinking on income inequality and development was influenced by Kuznets' U-shaped curve.²⁵ Kuznets suggested on the experience of the developed countries that historically there was a tendency for income inequality to increase first, and then to be reduced as countries developed from a low level. Accordingly, it was believed that a high degree of inequality in the distribution of income had a favourable effect on economic growth in the early stages of development and as development gained momentum its benefits would automatically 'trickle down' to the lower income groups over the long run. So this development approach emphasised the maximisation of the growth rate of the economy by building up capital, infrastructure and productive capacity of the economy and leaving the

²⁴ W A Lewis, 'Economic Development with Unlimited Supplies of Labour', *The Manchester School*, May 1954

²⁵ S Kuznets, "Economic Growth and Income Inequality", *AER*, March 1955

distribution of income untouched. It was like riding the horse of economic development and leaving the horse of economic equality to feed for itself.

Arthur Lewis²⁶ was the principal supporter of this strategy. He outlined the process through which income inequalities led to the economic growth of the 19th century England, 19th century Western Europe and the early 20th century Japan. He advocated the same for the LDCs. He contended that voluntary savings formed a significantly large share of the national income only where the inequality of income distribution was such that profits were a relatively large share of the national income. With development, the modern sector grew faster than the traditional sector and the relative share of profits in national income also increased. This tended to perpetuate income inequalities. In the long run, when employment opportunities increased all-round and the traditional sector also developed, the distribution of income would stabilise. This was an automatic process and was only a side effect of the growth of the economy.

Despite the inadequacy and non-comparability of data and the controversy over the use of the indicators of inequality, a number of empirical studies revealed that income inequalities had widened in the majority of the LDCs. They convinced the policy makers and economists in the LDCs and international organisations that the living standards of the very poorest in such countries had declined both in absolute and relative terms.

Basic Human Needs. Dissatisfied with growth, employment and income distribution approaches to development, economic thinkers have turned towards the "basic human needs" strategy since the 1970s. The World Bank's first mission to an LDC, Columbia, in 1950 had stated its objectives in terms of meeting "basic human needs."

But this objective was not taken due note on account of the multiplicity of planning objectives in the LDCs in those early years. It was, however, at the World Employment Conference of 1976 that the ILO espoused the concept of a "basic needs strategy". But India was the first among the LDCs to adopt this in its Fifth Five-Year Plan in 1974, two years ahead of the ILO declaration.

The basic human needs strategy lays emphasis on providing basic material needs in terms of health, education, water, food, clothing, shelter, work, etc., as well as non-material needs such as cultural identity and a sense of participation and purpose in life and work. The aim is to raise productivity and alleviate poverty by providing basic human needs to the poor. It is argued that the direct provision of basic

²⁶*The Theory of Economic Growth*, 1955.

human needs affects poverty in a shorter period and with fewer resources than those strategies which aim at increasing the productivity and incomes of the poor automatically over the long run through capital-intensive techniques. Human resource development in the form of education, health and other basic needs leads to a higher level of productivity. It is especially so where the people are rural landless or urban poor and have no physical assets except their two hands and the will to work. But there is no conflict between economic growth and basic needs strategies. Empirical studies by Norman Hicks have shown that the basic needs approach to development has been instrumental in increasing the growth rate in a number of LDCs.²⁷

²⁷Norman Hicks, "Growth vs. Basic Needs: Is There a Trade-off?", *World Development*, Nov.-Dec., 1979.

Chapter 2

CHARACTERISTICS OF AN UNDERDEVELOPED COUNTRY

In order to examine the problems of an underdeveloped country, it is useful to have in mind a general sketch of the economy of such a country. Though it is difficult to locate a representative underdeveloped country on the world map, yet it is possible to focus attention on some of its characteristics.

General Poverty

An underdeveloped country is poverty-ridden. Poverty is reflected in low per capita income. According to the *World Development Report*, 1986, 46 per cent of the population of the world in 1984 had GNP per capita of \$400 or less. On the other hand, 14.0 per cent of the world population living in the industrialised countries had GNP per capita of \$11,430, and only 5 capital surplus oil exporters of West Asia with only 0.3 per cent of the world population had GNP per capita of \$11,250. These figures reflect the extent of poverty in developing countries.

Giving figures for 1984, the *World Development Report* pointed out vast income disparities among nations. In 1984, there were 19 very rich countries. Of these, countries with population in excess of one million were Japan with GNP per capita of \$10,630, United States \$15,320 and Switzerland \$16,330. But three small capital surplus oil exporters of West Asia far exceeded the GNP per capita of the wealthy 19 countries. They were United Arab Emirates with GNP per capita of \$21,920, Kuwait \$16,720 and Qatar \$19,810. There were the poorest 34 low income countries with GNP per capita of \$400 or less. Of these, 22 were the rock bottom countries with GNP per capita of \$310 or less, including among others China with \$310, India \$260, Burma \$180, Nepal \$160, and Bangladesh \$130.

However, it is not relative poverty but absolute poverty that is more important in assessing such economies. Absolute poverty is measured not only by low income but also by malnutrition, poor health, clothing, shelter, and lack of education. Thus absolute poverty is reflected in low living standards of the people. In such countries, food is the major item of consumption and about 80 per cent of the income is spent on it as compared with 20 per cent in advanced countries. People mostly take cereals and other starches to the total absence of nutritional foods, such

as meat, eggs, fish, and dairy products. For instance, the per capita consumption of cereals in India is 427 grams per day as compared with less than 200 grams in developed countries. The per capita protein consumption in India is 48 grams daily as against 97 grams for the USA. As a result, the average daily calorie intake per capita hardly exceeds 2,000 in underdeveloped countries as compared with more than 3,000 to be found in the diets of the people of the advanced countries.

The rest of the consumption of such countries consists mainly of a thatched hut and almost negligible clothing. People live in extremely insanitary conditions. More than 1,200 million in the developing countries do not have safe drinking water and more than 1,400 million have no sanitary waste disposal. Of every 10 children born, two die within a year, another dies before the age of five, and only five survive to the age of 40. The reasons are poor nutrition, unsafe water, poor sanitation, uninformed parents and lack of immunisation. Services like education and health hardly flourish. Recent data reveal that there is one doctor for 3,690 persons in India, for 10,940 persons in Bangladesh, for 30,060 persons in Nepal, and for 1,810 persons in China, as against 544 persons for the developed countries. Most developing countries are expanding educational facilities rapidly. Still such efforts fall short of the manpower requirements of these economies. In many low income countries about 70 per cent of the primary school age children go to school. At the secondary level, enrolment rates are lower than 20 per cent in these countries, while enrolment in higher education hardly comes up to 3 per cent. Moreover, the type of education being imparted to the majority of the school and college-going children is ill-suited to the development needs of such countries. Thus the vast majority of the people in LDCs are ill-fed, ill-clothed, ill-housed and ill-educated. The number of people in absolute poverty in LDCs, excluding China, is estimated at about 800 million. Half of them live in South Asia, mainly in India and Bangladesh; a sixth live in East and Southeast Asia, mainly in Indonesia; another sixth in Sub-Saharan Africa; and the rest in Latin America, North Africa and the Middle East. Poverty is, therefore, the basic malady of an underdeveloped country which is involved in 'misery-go-round'. Professor Cairncross is justified in saying that the underdeveloped countries are the slums of the world economy.¹

Agriculture, the Main Occupation

In underdeveloped countries two-thirds or more of the people live in rural areas and their main occupation is agriculture. There are four times as many people occupied in agriculture in some underdeveloped

¹A K. Cairncross, *Factors in Economic Development*, p 15

countries as there are in advanced countries. In low income countries like India, Kenya, Bangladesh, and Vietnam, more than 71 per cent of the population is engaged in agriculture while the percentages for the United States, Canada, and West Germany are 2, 5 and 4 respectively. This heavy concentration in agriculture is a symptom of poverty. Agriculture, as the main occupation, is mostly unproductive. It is carried on in an old fashion with obsolete and outdated methods of production. The average land holdings are as low as 1 to 3 hectares which usually support 10 to 15 people per hectare. As a result, the yield from land is precariously low and the peasants continue to live at a bare subsistence level.

Such countries mainly specialize in the production of raw materials and foodstuffs, yet some also specialize in non-agricultural primary production, i.e., minerals. For example, Sri Lanka specializes in tea, rubber and coconut products; Malaysia in rubber, tin and palm oil; Indonesia in rubber, oil and tin; Pakistan in cotton; Bangladesh in jute; India in tea; and Brazil in coffee. An underdeveloped country is thus a primary sector economy. Besides the primary sector there is the underdeveloped secondary sector with a few simple, light and small consumer goods industries and an equally underdeveloped tertiary sector, i.e., transport, commerce, banking and insurance services. In some of the low income countries such as Bangladesh, Ethiopia, Nepal, Uganda, Ghana and Tanzania the share of agriculture in GDP continues to be more than 50 per cent and the share of industry and manufacturing less than 20 per cent.

A Dualistic Economy

Almost all underdeveloped countries have a dualistic economy. One is the market economy, the other is the subsistence economy. One is in and near the towns, the other is in the rural areas. One is developed, the other is less developed. Centred in the towns, the market economy is ultra-modern with all the amenities of life, viz., the radio, the car, the bus, the train, the telephone, the picture house, the palatial buildings, the schools and the colleges. Here too government offices, the business houses, the banks and a few factories are visible. The subsistence economy is backward and is mainly agriculture-oriented.

Dualism is also characterised by the existence of an advanced industrial system and an indigenous backward agricultural system. The industrial sector uses capital-intensive techniques and produces variety of capital goods and durable consumer goods. The rural sector is engaged in producing agricultural commodities with traditional techniques. Both perpetuate unemployment and disguised unemployment. There is also financial dualism consisting of the unorganised money

market charging very high interest rates on loans and the unorganised money market with low interest rates and abundant credit facilities. This aggravates economic dualism between the traditional sector and the modern industrial sector.

In many underdeveloped countries, there are foreign-directed enclaves thus making a triplistic economy. They are highly capitalistic and are found in petroleum, mining and plantations. The native hired labour working in these plantations and mines spends a considerable part of its wages on imported consumer goods. The standard of living of the workers working there differs from that of their brethren living in the subsistence sector.

The dualistic or triplistic nature of the economy is not conducive to healthy economic progress. The primary sector inhibits the growth of the secondary and the tertiary sectors by putting a limit on their expansion and development.

Underdeveloped Natural Resources

The natural resources of an underdeveloped country are underdeveloped in the sense that they are either unutilized or underutilized or misutilized. A country may be deficient in natural resources, but it cannot be so in the absolute sense. Although a country may be poor in resources, it is just possible that in the future it may become rich in resources as a result of the discovery of presently unknown resources or because new uses may be found for the known resources. Thus instead of saying that underdeveloped countries are absolutely deficient in natural resources, it is more appropriate to say that they have not been successful in overcoming the scarcity of natural resources by appropriate changes in technology and social and economic organization.² Generally speaking, they are not deficient in land, mineral, water, forest or power resources. Africa possesses considerable reserves of copper, tin, bauxite, and gold; Asia is rich in petroleum, iron, bauxite, manganese, mica and tin; and Latin America's reserves of petroleum, iron, zinc, and copper are immense. The forest wealth of Africa and South America still remains unpenetrated and unexplored. Thus underdeveloped countries do possess resources but they remain unutilized, underutilized or misutilized due to various inhibitions such as their inaccessibility, lack of technical knowledge, non-availability of capital and the small extent of the market.

Demographic Features

Underdeveloped countries differ greatly in demographic position and

²G.M. Meier and E. Baldwin, *Economic Development*, pp. 291-92

trends. Diversity exists in the size, density, age-structure and the rate of growth of population. But there appears to be one common feature, a rapidly increasing population which adds a substantial number to the total population every year. With their low per capita incomes and low rates of capital formation, it becomes difficult for such countries to support this additional number. And when output increases due to improved technology and capital formation, it is swallowed up by increased population. As a result, there is no marked improvement in the living standards of the masses. Warning about the increase in numbers, Keenleyside writes: "The womb is slower than the bomb but it may prove just as deadly. Suffocation rather than incineration may mark the end of the human story."³

Almost all the underdeveloped countries possess high population growth potential characterized by high birth-rate and high but declining death-rate. The advancement made by medical science has resulted in the discovery of marvellous drugs and the introduction of better methods of public health and sanitation which have reduced mortality and increased fertility. Declining death-rates and increasing birth-rates give a very high natural growth rate of population. The average annual growth rate of population in developing countries is 2 per cent as compared with about 0.7 per cent in developed countries. This rapid increase in numbers aggravates the shortage of capital in such economies because large investments are required to be made to equip the growing labour force even with obsolete equipment.

An important consequence of high birth-rate is that a larger proportion of the total population is in younger age groups. The percentage of population under 15 years of age is about 40 in developing countries, compared with only 20 to 25 per cent in developed countries. Moreover, 90 per cent of the dependents are children in LDCs whereas their percentage is only 66 in developed countries. A large percentage of children in the population entails a heavy burden on the economy which implies a large number of dependents who do not produce at all but do consume. With many dependents to support, it becomes difficult for the workers to save for purposes of investment in capital equipment. It is also a problem for them to provide their children with the education and bare necessities of life that are essential for the country's economic and social progress in the long run.

Underdeveloped countries have also a shorter life expectancy which means a smaller fraction of their population is available as an effective labour force. Average life expectancy at birth is roughly 51 years in low income countries whereas in the developed countries it is 75 years. Low

³H.L. Keenleyside in *Dynamics of Development*, (ed.) G. Hambridge, p. 9.

life expectancy means that there are more children to support and few adults to provide for them which inhibits the rate of economic growth.

Lastly, in the majority of underdeveloped countries, the density of agricultural population is very high in relation to the area of cultivated land. In Egypt, in the inhabited area of the valley of the Nile, the density of population is 600 persons per sq. km. Though in other underdeveloped countries it is much less, yet their density is increasing rapidly with the growth of population. The problem is becoming serious in the river deltas of Asia and Africa and in the densely populated islands of Malaysia, Indonesia, and Sri Lanka. Shortage of land in relation to an excessively large agricultural population leads to overcrowding, over-cropping and soil exhaustion thereby impeding economic progress."

Unemployment and Disguised Unemployment

In underdeveloped countries there is vast open unemployment and disguised unemployment. The unemployment is spreading with urbanisation and the spread of education. But the industrial sector has failed to expand along with the growth of labour force thereby increasing urban unemployment. Then there are the educated unemployed who fail to get jobs due to structural rigidities and the lack of manpower planning. With the present average annual growth rate of 4.5 per cent in urban population, 20 per cent of the labour force in urban areas is unemployed.

But underemployment or disguised or concealed unemployment is a notable feature of underdeveloped countries. Such unemployment is not voluntary but involuntary. People are prepared to work but they are unable to find work throughout the year due to the lack of complementary factors. Such unemployment is found among rural landless and small farmers due to the seasonal nature of farm operations and inefficient land and equipment to keep them fully employed. A person is said to be disguised unemployed if his contribution to output is less than what he can produce by working for normal hours per day. His marginal productivity is nil or negligible, and by withdrawing such labourers, farm output can be increased. In the 1950s, economists estimated the number of disguised unemployed at 25-30 per cent of rural labour force. Now it is agreed that it does not exceed 5 per cent, even though precise estimates are not available.

There are also other types of underemployed persons in such countries. A person is considered to be underemployed if he "is forced by unemployment to take a job that he thinks is not adequate for his purpose, or not commensurate with his training." Further, there are those who work full time in terms of hours per day but earn very little to

rise above the poverty level. They are hawkers, petty traders, workers in hotels and restaurants and in repair shops, etc., in urban areas. Open and disguised unemployed in urban and rural areas are estimated at 30-35 per cent of the labour force in LDCs.

Economic Backwardness

In underdeveloped countries particular manifestations of economic backwardness are low labour efficiency, factor immobility, limited specialization in occupation and in trade, economic ignorance, values and social structure that minimize the incentives for economic change.⁴

The basic cause of backwardness is to be found in low labour productivity as compared with the developed countries. This low labour efficiency results from general poverty which is reflected in low nutritional standards, ill health, illiteracy and lack of training and occupational mobility, etc.

There is also occupational immobility of labour due to the joint family system and the caste system. Certain cultural and psychological factors are more dominant than wage rates in determining the supply of labour. The joint family system makes people lethargic and stay-at-home. In many underdeveloped countries, certain occupations are reserved for members of some particular caste, religion, race, tribe or sex. In Latin America, cloth making falls within the exclusive jurisdiction of women. In India, a janitor always belongs to a particular caste. According to Stephen Enke, underdeveloped countries have what might be termed "an *occupational culture*." "Primarily, this means that traditional society fails to utilize the full utilization of human resources. More specifically, it means that men are less likely to strive for extra consumption." In underdeveloped countries people are mostly illiterate, ignorant, conservative, superstitious and fatalists. Poverty in such countries is abysmal, but it is considered to be God-given, something preordained. It is never attributed to personal lack of thrift and industry.

There is extensive prevalence of child labour and women's status and position in society are inferior to men. Dignity of labour is conspicuously absent. Government jobs, even of a clerical nature, have more prestige than manual work. People are ranked not according to their capacity to do a particular job but by age, sex, caste, clan and kinship. They are governed by customs and traditions. Individualistic spirit is absent. Exchange by barter is widespread and money economy is hardly understood. "The value system minimizes the importance of economic incentives, material rewards, independence and rational calculation. It

⁴Meier and Baldwin, *op. cit.*, p. 293.

inhibits the development and acceptance of new ideas and objectives and fails to compare the costs and advantages of alternative methods to achieve objectives. In short, the cultural value system within many poor countries is not favourable to economic achievement and the people remain economically backward.¹⁵

Lack of Enterprise and Initiative

Another characteristic feature of underdeveloped countries is the lack of entrepreneurial ability. Entrepreneurship is inhibited by the social system which denies opportunities for creative faculties. "The force of custom, the rigidity of status and the distrust of new ideas and of the exercise of intellectual curiosity, combine to create an atmosphere inimical to experiment and innovation." The small size of the market, lack of capital, absence of private property, absence of freedom of contract and of law and order hampers enterprise and initiative.

Besides, there exist a few entrepreneurs who are engaged in the manufacture of some consumer goods, and in plantations and mines that tend to become monopolistic and quasi-monopolistic. They develop personal and political contacts with the government officials, enjoy a privileged position, and receive preferential treatment in finance, taxation, exports, imports, etc. It is they who start new industries and thus found individual business empires which inhibit the growth of fresh entrepreneurship within the country.

The thin supply of entrepreneurs in such countries is also attributed to the lack of infrastructural facilities which add to the risk and uncertainty of new entrepreneurship. LDCs lack in properly developed means of transport and communications, cheap and regular power supply, availability of sufficient raw materials, trained labour, well-developed capital and money markets, etc.

Further, entrepreneurship is hindered by technological backwardness in underdeveloped countries. This reduces output per man and the products are of substandard quality. Such countries do not possess the necessary technical know-how and capital to evolve their own techniques which may be output-increasing and labour-absorbing. Mostly they have to depend upon imported capital-intensive techniques which do not fit in their factor endowments.

No wonder, LDCs lack dynamic entrepreneurship which Schumpeter regarded as the focal point in the process of economic development.

Insufficient Capital Equipment

Insufficiency of capital equipment is another general characteristic of

¹⁵Ibid., pp. 298-99.

such countries. Underdeveloped countries are characterized as "capital-poor or low-saving and low-investing" economies. There is not only an extremely small capital stock but the current rate of capital formation is also very low. In most underdeveloped countries gross investment is only 5-6 per cent of GNP whereas in advanced countries it is about 15-20 per cent. Such low rates of the growth of capital stock are hardly enough to provide a rapidly growing population (at 2-2.5 per cent per annum), let alone invest in new capital projects. In fact, these countries find it difficult to cover even depreciation of capital and replace the existing capital equipment.

The root cause of this capital deficiency is the problem of under-saving or, more precisely, that of under-investment in productive instruments capable of increasing their rate of economic growth. The per capita income being very low, people on the bare edge of subsistence cannot save much thereby leaving very little for further investment. There are extreme inequalities in the distribution of incomes in such countries. But this does not mean that the volume of savings available for capital formation is high. In fact, large savings are possible only in the case of 3-5 per cent of the people at the top of the income pyramid. Moreover, the persons at the peak of the income pyramid are traders and landlords who have a tendency to invest in unproductive channels such as in gold, jewellery, precious stones, idle inventories, luxurious real estates and money markets abroad, etc.

Another reason as to why the saving ratio does not rise with the increased level of incomes in the long run is the "demonstration effect." In everybody there is a great urge "to keep up with the Joneses," that is, to imitate the standard of living of our prosperous neighbours. Similarly, there is a tendency on the part of the people of the underdeveloped countries to emulate the higher consumption standards of advanced countries. As a result of the demonstration effect, the rise in incomes is spent on increased expenditure on conspicuous consumption and thus savings are almost static or negligible. This demonstration effect is usually caused by foreign films, magazines and visits abroad.

This tendency to emulate the consumption patterns of advanced countries is to be found not only in the case of private individuals but also in the case of governments. The governments in LDCs emulate social security programmes found in developed countries, viz., minimum wage legislation, health insurance, pension and provident fund schemes, etc., but these measures put obstacles in the way of entrepreneurship and thus retard capital formation. "It is not surprising," writes Haberler, "that poor and backward economies when they wake up and set their minds to develop in a hurry and catch up with more developed economies are tempted to overspend and live beyond

their means." Thus such countries suffer from chronic capital deficiency and the factors responsible for this are not only economic but also socio-political in nature.

Technological Backwardness

Underdeveloped countries are also in the backward state of technology. Their technological backwardness is reflected, firstly, in high average cost of production despite low money wages; secondly, in high labour-output and capital-output ratios as a rule, and on the average, given constant factor prices thus reflecting a generally low productivity of labour and capital; thirdly, in the predominance of unskilled and untrained workers; and lastly, in the large amount of capital equipment required to produce a national output. "Deficiency of capital hinders the process of scrapping off the old techniques and the installation of modern techniques. Illiteracy and absence of a skilled labour are the other major hurdles in the spread of techniques in the backward economy. Thus it may be pointed out that technological backwardness is not only the cause of economic backwardness, but it is also the result of it."

This technological backwardness is due to technological dualism which implies the use of different production functions in the advanced sector and the traditional sector of the economy. The existence of such dualism has accentuated the problem of structural or technological unemployment in the industrial sector and disguised unemployment in the rural sector. Underdeveloped countries are also characterised by structural disequilibrium at the factor level which leads to technological unemployment. This technological unemployment arises from mal-allocation of resources, the structure of demand and technological restraints.

Foreign Trade Orientation

Underdeveloped economies are generally foreign trade-oriented. This orientation is reflected in exports of primary products and imports of consumer goods and machinery. The percentage share of fuels, minerals, metals, and other primary products in the merchandise exports of the majority of LDCs, as revealed by the recent World Bank data is on the average about 80 per cent. For instance, the share of Ethiopia is 99 per cent, of Burma 97 per cent, of Uganda 99 per cent, of Indonesia 96 per cent, of Malaysia 80 per cent, Algeria 100 per cent, and of Kenya 86 per cent.

This too much dependence on exports of primary products leads to serious repercussions on their economies. Firstly, the economy concentrates mainly on the production of primary exports to the comparative

neglect of the other sectors of the economy. *Secondly*, the economy becomes particularly susceptible to fluctuations in the international prices of the export commodities. A depression abroad brings down their demand and prices. As a result, the entire economy is adversely affected. *Lastly*, too much dependence on a few export commodities to the utter neglect of other consumption goods has made these economies highly dependent on imports. Imports generally consist of fuel, manufactured articles, primary commodities, machinery and transport equipment, and even food. Coupled with these is the operation of the demonstration effect which tends to raise the propensity to import still further.

Of late; there has been a secular decline in the income terms of trade (capacity to import) of the underdeveloped countries so that they are faced with the balance of payments difficulties. An underdeveloped country's weak export capacity relatively to its strong import needs is reflected in its persistent external indebtedness. For instance, the gross inflow of public medium and long-term loans to Mexico was 11,163 million dollars and the repayment of principal was 3,073 million dollars in 1982.

The foreign trade-orientation also manifests itself through the flow of foreign capital to underdeveloped countries. It plays a dominant role in developing and expanding the export sector. It also controls and manages those services which are ancillary to the export sector. In this way foreign capital has tended to monopolize its position in certain selected fields like minerals, plantations, and petroleum in underdeveloped countries. The multi-national corporations (MNCs) from the developed countries have spread themselves in developing countries in manufacturing, export-oriented plantations, petroleum and mining. Such a widespread hold of foreign capital drains their resources. The foreigners are interested only in maximizing their gains at the expense of the developing countries.

Chapter 3

OBSTACLES TO ECONOMIC DEVELOPMENT

The basic characteristics of underdeveloped countries discussed in the preceding chapter might as well be regarded as the obstacles to economic development. Even though the general characteristics of underdevelopment are not common to all the underdeveloped countries, yet a broad answer to the question 'why a poor country is poor' is implicit in these characteristics. A number of these characteristics are both the cause and consequence of poverty. The following factors analyse the mutual causative relationships that inhibit development.

Vicious Circles of Poverty

There are circular relationships known as the 'vicious circles of poverty' that tend to perpetuate the low level of development in LDCs. Nurkse explains the idea in these words: "It implies a circular constellation of forces tending to act and react upon one another in such a way as to keep a poor country in a state of poverty. For example, a poor man may not have enough to eat; being underfed, his health may be weak; being physically weak, his working capacity is low, which means that he is poor, which in turn means that he will not have enough to eat; and so on. A situation of this sort relating to a country as a whole, can be summed up in the trite proposition. 'A country is poor because it is poor'"¹

The basic vicious circle stems from the fact that in LDCs total productivity is low due to deficiency of capital, market imperfections, economic backwardness and underdevelopment. However, the vicious circles operate both on the demand side and the supply side. The *demand side* of the vicious circle is that the low level of real income leads to a low level of demand which, in turn, leads to a low rate of investment and hence back to deficiency of capital, low productivity and low income. This is shown in Fig. 3.1. Low productivity is reflected in low real income. The low level of real income means low saving. The low level of saving leads to a low investment and to deficiency of capital. The deficiency of capital, in turn, leads to a low level of productivity and back to low income. Thus the vicious circle is complete from the *supply side*. It is depicted in Fig. 3.2. The low level of real income, reflecting

¹R. Nurkse, op. cit., p 4

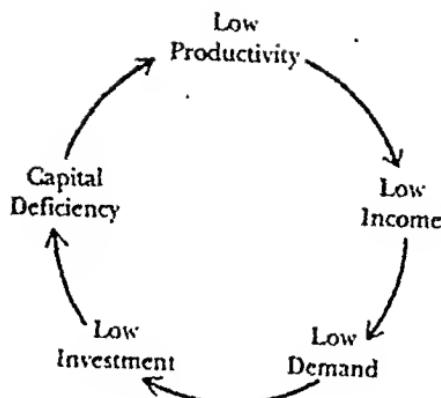


FIG. 3.1

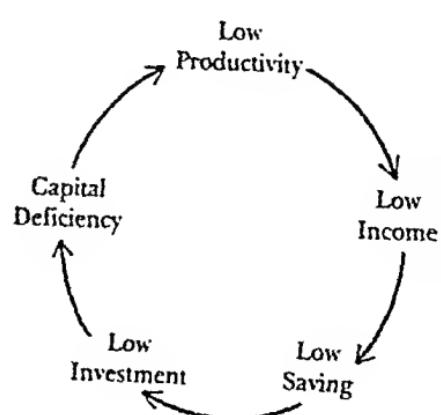


FIG. 3.2

low investment and capital deficiency is a common feature of both the vicious circles.

A third vicious circle envelops underdeveloped human and natural resources. Development of natural resources is dependent upon the productive capacity of the people in the country. If the people are backward and illiterate, lack in technical skill, knowledge and entrepreneurial activity, the natural resources will tend to remain unutilized, underutilized or even misutilized. On the other hand, people are economically backward in a country due to underdeveloped natural resources. Underdeveloped natural resources are, therefore, both a consequence and cause of the backward people.² This is explained in Fig. 3.3.

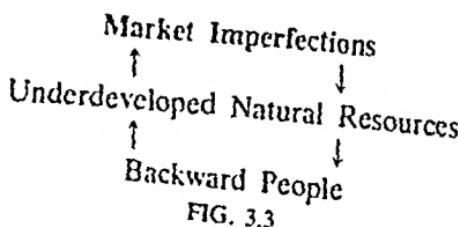


FIG. 3.3

"Poverty and underdevelopment of the economy are thus synonymous. A country is poor because it is underdeveloped. A country is underdeveloped because it is poor and remains underdeveloped as it has not the necessary resources for promoting development. Poverty is a curse, but a greater curse is that it is self-perpetuating."³

² Meier and Baldwin, *op. cit.*, p. 320.
³ K.N. Bhattacharya, *Indian Plans*, p. 4 Professor Bauer in his *Dissent on Development* regards the thesis of the vicious circle of poverty as invalid because it is conclusively refuted by empirical evidence. The model behind it is defective in that the variables specified or implied in it are either relatively unimportant as determinants of

Low Rate of Capital Formation

The most pertinent obstacle to economic development is the shortage of capital. This stems from the vicious circles of poverty analysed above. Poverty is both a cause and a consequence of a country's low rate of capital formation. In an underdeveloped country, the masses are poverty-ridden. They are mostly illiterate and unskilled, use outmoded capital equipment and methods of production. They practise subsistence farming, lack mobility and have little connection with the market sector of the economy. Their marginal productivity is extremely low. Low productivity leads to low real income, low saving, low investment and to a low rate of capital formation. The consumption level is already so low that it is difficult to restrict it further to increase the capital stock. That is why millions of farmers in such countries use outmoded and obsolete capital equipment. Such small sums as they may be able to save are often hoarded in the form of currency or used in purchasing gold and jewellery, etc. The inclination to hoard money is due to the absence of banking facilities in rural areas. No wonder, there is little capital formation in underdeveloped countries.

It is the high income group that does most of the saving in underdeveloped countries. But these savings do not flow into productive channels. On the other hand, they are dissipated "into real estate, gold, jewellery, commodity hoards and hoards of foreign or domestic currency, money lending and speculation."⁴ Thus 'value-retaining' objects and durable consumer goods dominate their expenditure pattern. In addition, conspicuous consumption plays an important part in their consumption patterns. Consequently, they prefer an imported article for its prestige value to an equally good domestic article.

But what are the main reasons for the lack of incentives to save and invest in underdeveloped countries? These include "imperfect maintenance of law and order, political instability, unsettled monetary

development, or they do not interact in the fashion implied. He points out that if the thesis were valid innumerable individuals, groups and communities could not have risen from poverty to riches as they have done throughout the world, in both rich and poor countries. Further, the thesis is also refuted by the very existence of developed countries, all of which started poor, with low incomes per head and low levels of accumulated capital. But they have advanced, usually without appreciable outside capital and invariably without external grants, which would have been impossible according to the thesis of the vicious circle of poverty. Moreover, as the world is a closed system, the thesis is inconsistent with the phenomenon of development. Confusion arises from failure to distinguish between levels of saving and rates of saving. Thus "the thesis of the vicious circle of poverty postulates either that low average levels entail zero rates of change, which is readily refuted by observation, or alternatively that a low level is the same as a zero rate of change which is a simple error in logic."

⁴R. Nurkse, *op. cit.*, p. 26

conditions, lack of continuity in economic life, the extended family system with its drain on resources, and its stifling of personal initiative and certain systems of land tenure.⁴ The other reasons which inhibit investment are, firstly, sheer habit. It is always easier to attempt the familiar than the unfamiliar. By nature man is happy in his old moorings and would not like to take risks in new ventures. The second reason is the small extent of the domestic market. The capacity of the domestic market to absorb new supplies of commodities is limited due to the low purchasing power of the masses. Thirdly, the difficulties of securing funds for investment purposes are also insurmountable. Many manufacturing activities require large capital-outlays which are difficult to obtain due to the lack of a well-developed capital and stock markets, and credit and banking systems. Fourthly, the lack of skilled labour and factor mobility enhance the cost of production and thereby hamper potential investors. Fifthly, absence or inadequacy of basic services like transportation, power and water-supply, etc., further reduce the inducement to invest. Lastly, the entrepreneurial ability in itself is a scarce factor in most of the underdeveloped countries. Whatever little entrepreneurship is available, that is scared away by high risks involved in investment. The traders and merchants are mostly engaged in the export industry which consists of primary products. Thus, there is no addition to the real stock of capital in these countries.

In between the low income and high income groups, there is a small middle income group. It is mostly engaged in well-established and less risky ventures, such as providing marketing and other services. This group, though not lacking in entrepreneurial ability, is reluctant to invest in manufacturing industries for the reasons which are not far to seek. There is the difficulty of obtaining institutional and corporate finance, advanced technology, trained labour and management. Above all, the difficulties enumerated in the preceding para go together to inhibit the growth of capital in such countries.

Socio-cultural Constraints

No doubt shortage of capital is a serious obstacle but it is not the only obstacle to economic development. As Nurkse has said: "Economic development has much to do with human endowments, social attitudes, political conditions and historical accidents. Capital is a necessary but not a sufficient condition of progress."⁵ Broadly speaking, underdeveloped countries possess social institutions and display such attitudes as are not conducive to economic development. According to the UN Report on *Processes and Problems of Industrialization in Underdeveloped Countries* there are 'elements of social resistance to economic

⁴Op. cit., p. 1.

change' in underdeveloped countries which include institutional factors characterized by 'rigid stratification of occupations' reinforced by traditional beliefs and values; attitudes involving 'inferior valuation attached to business roles and their incompatibility with the patterns of living and concepts of social dignity upheld by the high status groups' and 'factionalism' which has been defined as 'the tendency of the society to be divided by caste and class cleavages, ethnic or religious distinctions, differences in cultural tradition and social pattern, kinship loyalties and regional identification.' Such factors tend to inhibit social and geographical mobility and constitute a drag on progress. The people of such countries are averse to accept new values created by the impact of innovations.

The family is the primary economic and social unit. Family attitudes are responsible for population pressures and attachment to land. They also limit the range of individual freedom in making economic decisions which in turn influence the motives to save and invest. Money is hoarded or invested in gold, jewellery or in real estate or is spent to meet social obligations on ceremonial occasions to maintain status. Ostentatious expenditure, better known as conspicuous consumption, on the part of the wealthier classes also limits the capacity to save and invest.

In such a society relations are personal or patriarchal rather than universal. People are influenced by kinship or status as determined by caste, clan or creed. "It appears to be difficult to disentangle a person's abilities and capacities as a worker from his caste, religious beliefs, social or geographical origin or other attributes that have little to do with his potential contribution to production. Consequently, efficiency suffers because special abilities go unused."⁶ Moreover, administrators, managers, politicians and policy makers belong to the privileged and dominant classes of society. Since such persons do not have the best talents, they stand in the way of good government, clean administration, and in the efficient working of large-scale enterprises. They lead to nepotism, bribery, favouritism and inefficient administration. Bad administration whether in private or public enterprise makes economic development all the more difficult.

Social attitude towards education is further inimical to economic progress. Purely academic education which trains people for government and other clerical jobs is preferred to technical and professional education in such countries. There is prejudice against manual work which is despised and ill-rewarded. Consequently, there develops a natural distaste for practical work and training that leads to technological backwardness.

⁶N. Buchanan and C. Ellis, *Approaches to Economic Development*.

Oriental religions give less inducements to the virtues of thrift and hard work. People in such societies regard work as a necessary evil rather than a virtue. They place high values on leisure, contentment and participation in festivals and religious ceremonies. Thus, money that can be usefully invested is dissipated in uneconomic ventures. People do not believe that progress is possible through human efforts and man is not helpless before the blind forces of Fate. Religious dogmas inhibit progress, for they prevent social, economic and political institutions to change in a way that is conducive to economic development. As Dr S. Radhakrishnan observed, "The qualities associated with the Eastern culture make for life and stability; those characteristics of the West for progress and adventure."⁷

Agricultural Constraint

Another obstacle relates to the agricultural sector. The majority of LDCs are predominantly agricultural. Agricultural production constitutes a large share of their GDP and agricultural commodities form a considerable part of the value of their total exports. "Agricultural practices are controlled by custom and tradition. A villager is fearful of science. For many villagers insecticide is taboo. . . . A new and improved seed is suspect. To try it is a gamble. Fertilisers, for example, are indeed a risk. . . . To adopt these untried methods might be to risk failure. And failure could mean starvation."⁸ It is, in fact, not the behaviour of farmers that acts as a constraint on agricultural growth. Instead, the constraints are to be found in the environment in which farmers operate: the technology available to them, the incentives for production and investment, the availability and price of inputs, the provision of irrigation, and the climate. The LDCs situated in tropical and sub-tropical zones are at a disadvantage in terms of climate. Due to heat and torrential rains, their soils are poor as they contain little organic matter. As a result of the environmental factors, agricultural output fails to increase to meet the rising demand of the developing economy. Further, when the growth rate of population is also high, per capita agricultural and food output may actually decline instead of increasing, as was the case with the low income countries during 1970-80 when their per capita agricultural output declined by 0.4 per cent and per capita food output by 0.3 per cent per year. That is why the percentage share of food in the merchandise imports of many LDCs has been more than 25 per cent which entails a heavy burden on their foreign exchange resources. Thus the poor performance of the agricultural sector is a

⁷ *Eastern and Western Thought*, p. 258
⁸ *Economic Issues of the 1980s*, pp. 157-58

major constraint on the sluggish economic growth of LDCs.

Human Resources Constraint

Undeveloped human resources are an important obstacle to economic development in LDCs. Such countries lack in people possessing critical skills and knowledge required for all-round development of the economy. The existence of surplus labour in them is to a considerable extent due to the shortage of critical skills. Undeveloped human resources are manifest in low labour productivity, factor immobility, limited specialisation in occupation, and in customary values and traditional social institutions that minimise the incentives for economic development. Further, "the economic quality of the population remains low when there is little knowledge of available natural resources, possible alternative production techniques, necessary skills, existing market conditions and opportunities, and institutions that might be created to favour economising effort and economic rationality." Since LDCs have a dearth of critical skills and knowledge, physical capital, whether indigenous or imported, cannot be productively utilised. As a result, machines break down and wear out soon, materials and components are wasted, the quality of production falls, and costs rise.

Foreign Exchange Constraint

Economists like Myint, Preisch, Singer, Lewis and Myrdal maintain that certain 'disequalising forces' have been operating in the world economy as a result of which the gains from trade have gone mainly to the developed countries leading to foreign exchange constraint.

After the opening up of underdeveloped countries to world markets, there has been a phenomenal rise in their exports. But this has not contributed much to the development of the rest of the economy of these countries, as the export sector has developed to the utter neglect of the other sectors of the economy. On the other hand, too much dependence on exports has exposed these economies to international fluctuations in the demand for and prices of their products. They have become unstable due to cyclical instability and balance of payments difficulties. During a depression, the terms of trade become adverse and foreign exchange earnings fall steeply. As a result, they suffer from unfavourable balance of payments. But they are unable to take advantage of a fall in the prices of their products by increasing their exports due to the inelastic nature of supply of their export goods which are mainly agricultural and mineral products. Similarly, they are unable to benefit from a boom in world market. An improvement in their terms of trade is not accompanied by an increase in output and employment due to market imperfections, inadequate overhead capital and so on.

ral maladjustments. On the contrary, increased export earnings lead to inflationary pressure, malallocation of investment expenditure and to balance of payments difficulties.

As a result, there has been a secular deterioration in the income terms of trade (or the capacity to import) of LDCs so that they are faced with the foreign exchange constraint. This has led to the need for larger inflow of aid and foreign investment. Consequently, debt servicing of amortisation and interest of debt have risen, income payments of dividends and profits on private direct foreign investment have grown, and the net inflow of foreign capital has declined. All these have led to further shortage of foreign exchange reserves which acts as a severe limitation on the development programmes of LDCs.

Chapter 4

FACTORS OF ECONOMIC GROWTH: ECONOMIC AND NON-ECONOMIC

The process of economic growth is determined by two types of factors, economic and non-economic. Economic growth is dependent upon its natural resources, human resources, capital, enterprise, technology, etc. These are economic factors. But economic growth is not possible so long as social institutions, political conditions and moral values in a nation do not encourage development. These are non-economic factors. We study these economic and non-economic determinants of economic growth separately.

ECONOMIC FACTORS

Economists regard factors of production as the main economic forces that determine growth. The growth rate of the economy rises or falls as a consequence of changes in them. Some of the economic factors are discussed below:

1. **Natural Resources.** The principal factor affecting the development of an economy is the natural resources or land. "Land" as used in economics includes natural resources such as the fertility of land, its situation and composition, forest wealth, minerals, climate, water resources, sea resources etc. For economic growth, the existence of natural resources in abundance is essential. A country which is deficient in natural resources will not be in a position to develop rapidly. As pointed out by Lewis, "Other things being equal, men can make better use of rich resources than they can of poor."¹

In LDCs, natural resources are either unutilised, underutilised or misutilised. This is one of the reasons for their backwardness. The presence of abundant resources is not sufficient for economic growth. What is required is their proper exploitation. If the existing resources are not being properly exploited and utilised, the country cannot develop. J.L. Fisher has rightly said, "There is little reason to expect natural resource development if people are indifferent to the products or services which such resources can contribute."² This is due to

¹ W A Lewis, *op. cit.*, p. 52

² J L Fisher in Williamson and Buttner, *op. cit.*, p. 34

economic backwardness and lack of technological factors. Therefore, natural resources can be developed through improved technology and increase in knowledge. In reality, as pointed out by Lewis, "the value of a resource depends upon its usefulness, and its usefulness is changing all the time through changes in tastes, changes in technique or new discovery."³ When such changes are taking place any nation can develop itself economically through the fuller utilisation of its natural resources. For example, Britain underwent agricultural revolution by adopting the method of rotation of crops between 1740-60. Similarly, France was able to revolutionise its agriculture on the British pattern despite shortage of land. On the other hand, the countries of Asia and Africa have not been able to develop their agriculture because they have been using old methods of production.

It is often said that economic growth is possible even when an economy is deficient in natural resources. As pointed out by Lewis, "A country which is considered to be poor in resources today may be considered very rich in resources at some later time, not merely because unknown resources are discovered, but equally because new uses are discovered for the known resources." Japan is one such country which is deficient in natural resources but it is one of the advanced countries of the world because it has been able to discover new uses for limited resources. Moreover, by importing certain raw materials and minerals from other countries, it has been successful in overcoming the deficiency of its natural resources through superior technology, new researches, and higher knowledge. Similarly, Britain has developed without non-ferrous metals.

The means of transport and communications have an important bearing on economic growth. Their development reduces the transport costs, and increases the external and internal trade of the country. As a result, the economy progresses. In countries where road, rail, canals or rivers are interconnected with each other, economic growth is encouraged, as has been the case in Britain, France, Germany and the Netherlands.

Thus for economic growth the existence of abundant natural resources is not enough. What is essential is their proper exploitation through improved techniques so that there is little wastage and they could be utilised for a longer time.

2. Capital Accumulation. The second important economic factor in growth is capital accumulation. Capital means the stock of physical reproducible factors of production. When the capital stock increases

³J.L. Fisher in Williamson and Buttrick, *op. cit.*, p. 34.

⁴W.A. Lewis, *op. cit.*, p. 52.

ith the passage of time, this is called capital accumulation (or capital formation). The process of capital formation is cumulative and self-feeding and includes three inter-related stages: (a) the existence of real savings and rise in them; (b) the existence of credit and financial institutions to mobilise savings and to divert them in desired channels, and (c) to use these savings for investment in capital goods.

There are various possibilities of increasing the rate of capital accumulation. Since the propensity to save is low in an LDC, voluntary savings will not be forthcoming in sufficient quantities. Therefore, the obvious way is to resort to forced savings. Forced savings reduce consumption and thereby release resources for capital formation. The various methods of forced savings are taxation, deficit financing and borrowing. Nurkse also suggests mobilisation of the disguised unemployed in rural areas for construction works as an important means for capital formation in LDCs. Besides, there are external resources in the form of loans, grants and larger exports that can help in capital formation.

Capital formation is the main key to economic growth. On the one hand, it reflects effective demand and, on the other hand, it creates productive efficiency for future production. Capital formation possesses special importance for LDCs. The process of capital formation leads to the increase in national output in a number of ways. Capital formation is essential to meet the requirements of an increasing population in such economies. Investment in capital goods not only raises production but also employment opportunities. It is capital formation that leads to technological progress. Technological progress in turn leads to specialisation and the economies of large-scale production. Capital formation helps in providing machines, tools and equipment for the rising labour force. The provision for social and economic overheads like transport, power, education, etc., in the country is possible through capital formation. It is also capital formation that leads to the exploitation of natural resources, industrialization and expansion of markets which are essential for economic progress. According to Lewis, the rate of capital formation in LDCs is 5 per cent or less which should be raised to the level of 12 to 15 per cent. The estimates of Kuznets reveal that during modern economic growth gross capital formation in developed countries was from 11-13 per cent to 20 per cent and above while net capital formation was from 6 per cent to 2-14 per cent.

Again, according to Kuznets, the incremental capital-output ratio (ICOR) has played an important role in modern economic growth. The ICOR reflects productivity of capital. It refers to the additional amount of capital required to produce an additional unit of output. In

LDCs, the ICOR is high because large investments are made in social overhead projects requiring long gestation periods. Moreover, the rate of unused capacity in capital-intensive manufacturing industries is high due to the non-availability of the complementary factors of production. Therefore, efforts should be made to remove such constraints so as to lower the ICOR.

3. Organisation. Organisation is an important part of the growth process. It relates to the optimum use of factors of production in economic activities. Organisation is complement to capital and labour and helps in increasing their productivities. In modern economic growth, the entrepreneur has been performing the task of an organiser and undertaking risks and uncertainties. The entrepreneur is not a man of ordinary ability. He is an economic leader who possesses the ability to recognise opportunities for successful introduction of new commodities, new techniques, and new sources of supply, and to assemble the necessary plant and equipment, management, and labour force and organise them into a running concern. He is the kingpin of any business enterprise for without him the wheels of industry cannot move. So entrepreneurship is an indispensable ingredient in economic development. For instance, the credit for the industrial revolution in England goes to the entrepreneurs, and of the economic growth of the United States in the 19th century and the mid 20th century to the improvement in the quality of management.

But LDCs lack in entrepreneurial activity. Such factors as the small size of the market, capital deficiency, technological backwardness, absence of private property and contract, lack of skilled and trained labour, non-availability of adequate raw materials and infrastructural facilities like transport, power, etc., increase risks and uncertainties. That is why such countries lack entrepreneurs. According to Myrdal, the Asian countries lack entrepreneurship not because they are deficient in capital or raw materials but because they are deficient in persons with right attitude for entrepreneurship. The Japanese possess such attitude in abundance. This is the reason for Japan's rapid economic growth and inclusion among the developed countries.

LDCs should create a climate for encouraging entrepreneurship. To remove market imperfections, the existing institutions should be improved. Monopolistic institutions should be controlled and curbed. The knowledge of market opportunities should be increased. Laws should be passed and strictly enforced for the protection of property rights efficiently and the maintenance of law and order within the country.

Besides, it requires the establishment of financial institutions which collect savings and canalise them for entrepreneurial activities. To

facilitate this process, such financial institutions like the savings banks, investment banks, and the complex of brokers, dealers and commercial banks that comprise the capital and money markets are required. The government should adopt such monetary and fiscal policies which encourage the growth of entrepreneurship.

The shortage of skilled personnel of various kinds such as workers, scientists, technicians, managers, administrators etc., poses a serious problem in the success of entrepreneurship in underdeveloped countries. It necessitates the setting up of scientific, technological, managerial, research and training institutes. Though management and entrepreneurship are two different things in both the private and public sectors, yet scientific, technical and managerial personnel are very important for the success of entrepreneurship.

Apart from providing economic overhead capital, the state should also help in importing machinery and capital equipment and in evolving appropriate technologies in various fields which may be in keeping with the factor endowments of the country.

Facilities to finance such techniques and the supply of raw materials, and wider markets will help in increasing the supply of entrepreneurs. The provision of all the above noted social, economic and technological institutions will push even the latent entrepreneurship in the right direction. Moreover, the state can itself assume the role of an entrepreneur in key, basic and heavy industries, and also in certain consumer goods industries and service sector in public interest.

4. Technological Progress. Technological changes are regarded as the most important factor in the process of economic growth. They are related to changes in the methods of production which are the result of some new technique of research or innovation. Changes in technology lead to increase in the productivity of labour, capital and other factors of production.

Kuznets traces five distinct patterns in the growth of technology in modern economic growth. They are: a *scientific discovery* or an addition to technical knowledge; an *invention*; an *innovation*; an *improvement*; and the *spread of invention* usually accompanied by improvements. Like Schumpeter, he regards innovation as the most important technological factor in economic growth. In modern economic growth the five factors, mentioned by Kuznets, have helped in the development of technology. Kuznets points out that LDCs must import modern technology to accelerate their productive capacity in the short run because they cannot wait until they themselves invent or modify the technology of advanced countries. But as they adopt imported technology, they must develop their indigenous technical

It is a misnomer that all modern technology is capital-

Advanced countries have also low-cost capital-saving labour-intensive productivity-raising technology which can be transferred to developing countries.

LDCs should, therefore, benefit from the vast fund of technical knowledge of the advanced countries. However, scientific and industrial technology to be useful in an LDC needs careful processing and adaptation in accordance with its social, economic and technical absorption capacities and requirements. Above all, imported technology requires strong backing of *R* and *D* studies of problems arising in assimilation, adaptation and improvement in keeping with the factor endowments of the country. One of the principal causes in modern economic growth has been the spending of high percentages of their national income on *R* and *D* by the advanced countries.

5. Division of Labour and Scale of Production. Specialisation and division of labour lead to increase in productivity. They lead to economies of large-scale production which further help in industrial development. They increase the rate of economic development. Adam Smith gave much importance to the division of labour in economic development. Division of labour leads to improvement in the productive capacities of labour. Every labourer becomes more efficient than before. He saves time. He is capable of inventing new machines and processes in production. Ultimately, production increases manifold. But division of labour depends upon the size of the market. The size of the market, in turn, depends upon economic progress, that is, the extent to which the size of demand, the general level of production, the means of transport, etc., are developed. When the scale of production is large there is greater specialisation and division of labour. As a result, production increases and the rate of economic progress is accelerated. Larger pecuniary external economies are available and benefits of indivisibilities accrue. These indivisibilities are power, transport, etc., and their uses lead to industrial progress. Production increases in this way and rapid economic growth takes place.

One of the important factors in modern economic growth has been the spectacular development of the means of transport and communications through such technological changes as railroad, ironclad vessel, automobile and truck, and more recently the jet airplane and supertanker as well as cost-reducing investments, such as the Suez and Panama Canals, and the development of specialised and general press, the radio, the telephone and telegraph communications. Some of the developed countries having vast geographical areas such as the United States, Canada and Australia have been able to expand the size of their internal and external markets through the development of their means of transport and communications.

The growth process in an LDC can be accelerated by a widening of the market through the adoption of modern means of transport and communications. To widen both domestic and foreign markets, it should also adopt standardisation and grading of its products. Further, there should be growth in the scale of firms and changes in the type of organisation so that there is greater specialisation and division of labour. In other words, economic growth through agricultural and industrial development in LDCs should be accompanied by commercialisation.

6. Structural Changes. Structural changes imply the transition from a traditional agricultural society to a modern industrial economy involving a radical transformation of existing institutions, social attitudes, and motivations. Such structural changes lead to increasing employment opportunities, higher labour productivity and the stock of capital, exploitation of new resources and improvements in technology.

An LDC is characterised by a large primary sector and a very small secondary sector along with an equally small tertiary sector. Structural changes may begin with the transfer of population from the primary to secondary and then to tertiary employment. In an over populated agriculture-oriented economy, 70-80 per cent of the population is engaged in the agricultural sector. Structural changes involve the expansion of the non-agricultural sector so that the proportion of population in the agricultural sector is progressively reduced. It implies reduction in the size of contribution to net national output by the agricultural sector. But a decline in the share of the agricultural sector in the net national product does not mean a fall in the output of agriculture. Rather agricultural output must increase in absolute terms. In order to increase agricultural output, radical changes will have to be made in the form of land reforms, improved agricultural techniques and inputs, better marketing organisation, new credit institutions etc.

When agricultural production increases, it increases money incomes in the agricultural sector. This, in turn, expands rural demand for consumer goods and agricultural inputs which act as stimulants to the expansion of the industrial sector. The industrial sector itself affects the agricultural sector. First, the expansion of farm output requires improved farm machinery and other inputs manufactured by the industrial sector. Second, increasing agricultural productivity and incomes expand the demand for consumer goods and services available in the industrial sector. "The scope for increasing agricultural productivity and incomes, in other words, is heavily dependent upon the structural transformation of the economy as it affects the growth of commercial demand for goods produced, the growth of alternative employment opportunities, and the increased quantity of purchased

inputs available to the agricultural sector."

Another important aspect of structural changes is the transfer of population from primary and secondary to tertiary employment. Tertiary production includes a number of *dissimilar* services producing non-material goods like transport, retail and wholesale distribution, education, government and domestic services, etc. With economic development the demand for tertiary products increases very rapidly because the expansion of the agricultural and industrial sectors is dependent largely on the existence of transport, retail and wholesale distribution, technical personnel, etc. So the proportion of working labour in tertiary occupations rises with economic development. But many of the tertiary occupations like railways, motor transport, etc., are of high capital intensity and involve substitution of capital for labour on a large scale. Thus, in the initial phase of economic growth, tertiary occupations fail to absorb large number of people, and the majority of workers become "pedlars of all kinds of goods and services requiring little or no capital outfit, such as vendors of fruit, newspapers, or else car washers, porters, waiters and shop assistants." This type of underemployment is reinforced by disguised unemployment in the rural sector.

An *innovation* or the opening of a new area may bring about a structural change within the economy thereby widening the domestic market and creating a foreign market. Technical invention takes place in such societies where traditionalism gives way to desire for experimentation. "Apart from the build-up of economic overhead capital, such as a communications and transport system and investment in harbour facilities, some warehouses and similar installation favouring especially foreign trade, most of the innovations introduced during the preparatory period are based upon changes in the institutional arrangements in the legal, educational, familial, or motivational orders. Once these new institutions have been created, they operate as 'gifts from the past,' contributing freely to the vigorous spurt of economic activity in the period of take-off. What is perhaps most important about the structural changes taking place during the take-off period is the adaptation of previously existing institutions for new ends, especially for capital formation."⁴

However, those structural changes which affect technical skills, administrative and entrepreneurial activities and the supply of capital are more important. The need for capital requires the existence of financial institutions through which savings can be collected and

⁴Bert F. Hoselitz, "Non-Economic Factors in Economic Development," *A.E.R.*, May 1957.

canalized into productive channels. To facilitate this process, such financial institutions like the savings banks, bond and stock exchanges investment banks and complex of brokers, dealers and commercial banks that comprise the money market are required.

The shortage of skilled personnel of various kinds such as scientists managers, engineers, administrators, etc., poses a serious problem in LDCs. It requires the setting up of scientific, technological and managerial research and training institutes in the take-off stage. For instance, the practice of Dutch studies under the Tokugawa and the adoption of Western techniques and research facilities in science and technology resulted in far-reaching institutional changes which paved the way for Japan's rapid progress. But the basic problem is to increase the supply of entrepreneurs which depends not on a set of particular institutions but upon a whole series of environmental conditions and appropriate personal motivations. Social and economic conditions must be conducive to the exercise of entrepreneurial abilities. Public policies should provide economic overhead capital and favourable monetary and fiscal incentives. Technological advance and facilities to finance innovations will increase the supply of entrepreneurship and so will the mobility of resources and wider markets.

According to Kuznets, these structural changes are accompanied by growth in the scale of firms and changes in the type of organisation within sectors such as manufacturing and trade, from small incorporated firms to the large corporate unit with the rapid shifts in industrial structure and rapid change in technology. There are also rapid shifts in allocation of output among types and sizes of producing firms, and consequently in the allocation of labour force. There is high interindustry, interstatus and interoccupational mobility of the labour force among employees from blue to white-collar jobs, from less to more skilled occupations and from small to large enterprises.

NON-ECONOMIC FACTORS

Non-economic factors influence economic growth along with economic factors. According to Nurkse, "Economic development has much to do with human endowments, social attitudes, political conditions and historical accidents." Therefore, social, cultural, psychological, human, political and administrative factors are as much important as economic factors in economic development. As pointed out by Cairncross, "Development is not just a matter of having plenty of money nor is it purely an economic phenomenon. It embraces all aspects of social behaviour; the establishment of law and order, scrupulousness in business dealings, including dealings with the revenue authorities;

relationships between the family, literacy, familiarity with mechanical gadgets and so on."⁵ We study the essential non-economic factors below.

1. Social Factors

Social attitudes, values and institutions also influence economic growth. The term "attitude" means the totality of beliefs and values that cause human behaviour to be what it is. The term "values" refers to motivations of human behaviour towards particular ends.

Modern economic growth has been influenced by social and psychological factors. Western culture and education led to reasoning and scepticism. It inculcated the spirit of adventure which led to new discoveries and inventions and consequently to the rise of the new mercantile classes. These forces brought about changes in social attitudes, expectations, and values. People cultivated the habits of saving and investment, and undertook risks to earn profits. They developed what Lewis calls, "The will to economise," to maximise output for a given input. As a result, the European countries experienced the Industrial Revolution in the 18th and 19th centuries. Economic and religious freedom brought about further changes in social attitudes and values. Single family unit took the place of joint family system which further helped in modern economic growth.

In LDCs there are such social attitudes, values and institutions which are not conducive to economic development. Religion gives less inducements to the virtues of thrift and hard work. People are fatalists and therefore are not hard working. They are influenced more by traditional customs and place high values on leisure, contentment and participation in festivals and ceremonies. Thus social attitudes stand in the way of development when money is wasted on non-economic ventures. Moreover, the joint family is the primary social and economic unit. It prevents people from taking independent economic decisions, breeds lethargy, and encourages growth in numbers. In such societies relations are personal or patriarchal. People are influenced by caste, clan or creed at the social level.

These social attitudes, values and institutions should be changed or modified for economic development to take place. Social organizations like the joint family, caste system, kinship, and religious dogmas should be modified so that they may be more favourable to development. But it is not an easy task. Any social change will bring discontentment and resistance in its wake. It may, therefore, adversely affect the national economy. Therefore, all socio-cultural changes should be selective.

⁵A.K. Cairncross, *op. cit.*, p. 26.

They should be introduced by stages. Persuasion and not coercion should be the method. Education and demonstration can do a lot in this direction. Popular education leads to popular enlightenment and opens the way to knowledge. It opens men's mind to new methods and new techniques of production. It creates self-discipline, power to think rationally and to probe into the future. Emphasizing the importance of education in economic development, Cairncross writes: "No country can count itself developed, in which education in the way of industrial civilization has not taken place. Peasants have to be brought within the monetary economy and not left to pursue subsistence farming, workers have to become used to working fixed hours in factories for wage payments; towns have to grow, and so banks and business enterprises, the fruits of science have to be applied throughout the economy. Above all, there must emerge as a continuing element in the life of the country, a group of business, administrative and political leaders who can be depended upon to maintain the momentum of development by constant innovation."

Certain races have higher tendencies to develop than others, such as Punjabis and Parsees in India, and Negroes in America and Brazil. For development, it is essential that races should not be kept aloof from each other. Rather, they should be intermixed so that there is a union of cultural values and racial qualities. But such measures require lot of patience. The society's structure is transformed by such racial changes.

The UN Report on *Economic Development of Underdeveloped Countries* laying emphasis on changes in social attitudes, values and institutions observes that without painful adjustments rapid economic development is impossible. Old ideas will have to be dispensed with, old institutions will have to be dispensed with, the bonds of caste, religion and race will have to be broken. But the process of change should be evolutionary rather than revolutionary. Otherwise, radical changes in social attitudes and values will bring about dissatisfaction, discontentment and violence in their wake and retard the path to economic development.

Myrdal in his *Asian Drama* advocates the adoption of "modernisation values" or "modernisation ideals" for the rapid economic development of LDCs. Modernisation means "the social, cultural and psychological framework which facilitates the application of tested knowledge to all phases and branches of production." The modernisation ideals include, first, rationality in thought and action through a deliberate cultivation of scientific attitude and application of modern technology in order to increase productivity, raise levels of living, and bring about social and economic equalisation. As pointed out by Jawaharlal Nehru, "The test of a country's advance is how far it is utilising modern techniques

Modern technique is not a matter of just getting a tool and use it. Modern technique follows modern thinking."

But the desire to better their lot and the initiative to make material progress must arise among the nationals of the country. Development must be willed by the country itself; it cannot be implanted from outside. External forces should stimulate and facilitate the national forces. They should supplement and not supplant them. Foreign aid can only initiate or stimulate development; it cannot maintain it. Development will falter in the absence of sufficient internal motivation. Unless the momentum of development comes from within the economy, the initial initiative to development will be dissipated and shortlived. As Cairncross puts it "Development is impossible if it does not take place in the minds of the men." It is, therefore, imperative that if the process of economic growth is to be cumulative and longer lasting, the forces of development must be firmly rooted within the domestic economy.

Modernisation ideals also require change in institutions and attitudes 'in order to increase labour efficiency and diligence, effective competition, mobility and enterprise; permit greater equality of opportunities; make possible higher productivity and well-being and generally promote development'. The barriers of caste, colour, religion, ethnic origin, culture, language, and provincial loyalties should be broken down, and property and education should not be so unequally distributed as to represent social monopolies. All this is possible through changes in social institutions and attitudes of the people by spreading education and knowledge. People should be aware of the objectives before them and the 'will' to attain them. But where the social set-up is influenced by rigid caste and joint family systems, there is little individual freedom and professional mobility. As a result, people have little incentive to work more, earn more and save more, and have a backward sloping curve of effort and risk taking. For development, therefore, such social institutions and attitudes should be changed which stand in the way of free society and free competition. For instance, Myrdal views the various land reforms in India as attempts to break up the caste system so as to eradicate social monopolies and barriers to free competition.

Modernisation ideals with regard to attitudes are called by Myrdal as the creation of the "new man" or the "modern man", the "citizen of the new state", the "man in the era of science", the "industrial man". This implies change in attitudes so that people have efficiency, diligence, orderliness, punctuality, frugality, scrupulous honesty, rationality in decisions on action, preparedness for change, alertness to opportunities as they arise in the changing world, energetic enterprise, integrity and self-reliance, cooperativeness, and willingness to take the long view.

Changes in attitudes towards modernisation lead to development of

the agricultural, industrial and tertiary sectors of the economy. But the development of these sectors is not possible without entrepreneurship. According to Myrdal, LDCs lack entrepreneurship not because they are deficient in capital or raw materials but because they are deficient in persons with right attitude for entrepreneurship. E. Hagen in his *On the Theory of Social Change* (1962) ascribes the lack of entrepreneurship to the childhood environment in the traditional society which creates tensions, anxieties, and rage among adults. They suffer from "respect withdrawal" and develop "retreatism" as the dominant personality trait. According to Hagen, it is over a very long period of several generations that there develops a class of entrepreneurs with "need achievement" motivation. Such psychological attitude emerges when a generation of fathers demand achievement or do not stand in the way of achievement, and mothers play a supporting role in encouraging activity on the part of infants.

McClelland in *The Achieving Society* (1961) propounds the view that the growth of entrepreneurship depends on the need for achievement motivation. According to him, *n-Ach* (*n*-achievement) is a relatively stable personality characteristic rooted in experiences in middle childhood. Variations in *n-Ach* levels were correlated with the stories in children's textbooks, and it was found that *n-Ach* was very high in the United States of America 80 or 90 years ago. It is the highest in Russia and China now. It is rising in such developing countries as Mexico and Nigeria. He attributes high *n-Ach* in these countries to ideological reform hypothesis, to Protestantism in Europe and America, to zealous Communist ideology in Russia and China, and to the spirit of nationalism in the developing countries.

McClelland along with David Winter conducted experiments in Kakinada town of Andhra Pradesh in India and revealed that neither money nor caste nor traditional beliefs played an important part in the *n-Ach* factor in the emergence of entrepreneurship there. It was found that those who were trained in the Small Industries Extension Training Institute at Hyderabad in 1964-65 for a two-week motivation programme displayed a more active entrepreneurial behaviour later on. Thus, attitudes, motivations and environment should all combine to promote entrepreneurship for economic development.

2. Human Factor

Human resources have been an important factor in modern economic growth. Economic growth does not depend on the mere size of human resources but on their efficiency. According to Kuznets, the population of Europe increased by 433 per cent between 1750-1950 while the population of the remaining world increased by 200 per cent over the

period. Whereas population increased five-fold in European and now developed countries there was ten-fold increase in their GNP per capita.

Such a phenomenal increase in their GNP per capita is attributed to the development of the human factor which is reflected in the increased efficiency or productivity of their labour force. This is called human capital formation. This "is the process of increasing knowledge, the skills, and the capacities of all people of the country." It includes expenditure on health, education and generally on social services. Denison's estimates reveal that the expenditure incurred on education in the United States between 1929-57 contributed 23 per cent to its gross national output. According to Soloman Fabricant; the increase in the total national product of the United States through increase in physical capital between 1889-1957 equalled the increase through higher labour productivity.

But rapidly increasing population is a great hindrance to the economic development of LDCs. With their low per capita incomes and low rates of capital formation, it becomes difficult for them to support the increase in population. And when output increases due to improved technology and capital formation, it is swallowed up by the increase in numbers. As a result, there is no improvement in the real growth rate of the economy.

A proper use of human resources can be made for economic development in the following ways: *First*, there should be control over population. Human resources can be utilized best if the size of population is controlled and reduced. This requires family planning and research on population control so as to bring down the birth-rate. *Second*, there should be change in the outlook of the labour force. The social behaviour of the labour force is important in the process of economic development. To increase labour productivity and the mobility of labour there should be change in the outlook of the people so that they should imbibe the importance of dignity of labour. This requires changes in institutional and social factors. Such changes depend upon the spread of education. It is the educated and trained labour force with high productive efficiency that leads to rapid economic development. Thus "the most important requirement of rapid industrial growth is people. People ready to welcome the challenge of economic change and the opportunities in it. People, above all, who are dedicated to the economic development of their country, and to high standards of honesty, competency, knowledge and performance."

3. Political and Administrative Factors

Political and administrative factors also helped in modern economic growth. The economic growth of Britain, Germany, the United States,

Japan and France has been due to their political stability and strong administration since the 19th century. With the exception of the United States, they were directly involved in the two World Wars and were devastated. Still they have continued to progress on the strength of their political and administrative traditions. On the other hand, Italy has not been able to grow up to their level due to political instability and corrupt and weak administration. Peace, protection and stability have encouraged the development of entrepreneurship in developed countries, along with the adoption of appropriate fiscal and monetary policies by the governments from time to time.

The weak administrative and political structure is a big hindrance to the economic development of LDCs. A strong, efficient and incorrupt administration is, therefore, essential for economic development. Professor Lewis rightly observes: "The behaviour of government plays an important role in stimulating or discouraging economic activity." Peace, stability and legal protection encourages entrepreneurship. The greater the freedom, the more the entrepreneurship will prosper. Technical progress, factor mobility and large size of market help stimulate enterprise and initiative. But the former can only take place under clean administration and stable political conditions. Similarly, a good government can help in capital formation by adopting the right monetary and fiscal policies, and by providing timely overhead capital facilities. Thus "a government must offer society the services if it desires to stimulate economic development: order, justice, police and defence; rewards commensurate with ability and application in production; security in the enjoyment of property which may be of extremely varied character; testamentary rights, the assurance that business covenants and contracts will be kept, the provision of standards of weights, measures and currency and the stability of governmental system itself, to maintain the sense of order and future calculability of expectations and duties." In this way, clean and strong administration full of justice stimulates economic development. As rightly pointed out by Lewis, "No country has made progress without positive stimulus from intelligent governments."

All LDCs have emerged as independent nations from the colonial rule. But independence has not necessarily led to national consolidation. Myrdal regards national consolidation as "a pre-condition both for the preservation of the states as a growing concern and for its efficient functioning as a matrix for the effective formation and execution of national policies, that is, for planning." By national consolidation he means "a national system of government, courts and administration that is effective, cohesive, and internally united in purpose and action, with unchallenged authority over all regions and groups within the bound-

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aries of the state." National consolidation, in turn, requires "emotional integration" which coincides with the modernisation ideals of changes in values, attitudes and institutions.

Chapter 5

MEANING AND CHARACTERISTICS OF MODERN ECONOMIC GROWTH

MEANING

Modern economic growth refers to the development of the developed countries of Western Europe, the United States, Canada, Australia and Japan.

Professor Simon Kuznets in his *Nobel Memorial Lecture* defined economic growth "as a long-term rise in capacity to supply increasingly diverse economic goods to its population, this growing capacity based on advancing technology and the institutional and ideological adjustments that it demands."¹ This definition has three components: *First*, the economic growth of a nation is identified by the sustained increase in the supply of goods. *Second*, advancing technology is the permissive factor in economic growth which determines the growth of capacity in supplying diverse goods to the population. *Third*, for an efficient and wide use of technology and its development, institutional and ideological adjustments must be made to effect the proper use of innovations generated by advancing stock of human knowledge. For example, modern technology is incompatible with the rural mode of life, the large and extended family pattern, family enterprise and illiteracy.

CHARACTERISTICS OF MODERN ECONOMIC GROWTH

Modern economic growth marks a distinct economic epoch. Professor Simon Kuznets has pointed out six characteristics of modern economic growth that have emerged in the analysis based on national product and its components, population, labour force, and the like. Of the six, two characteristics are quantitative that relate to national product and population growth, two relate to *structural* transformation, and two to *international* spread. We discuss them one by one.

1. High Rates of Growth of Per Capita Product and Population

Modern economic growth, as revealed by the experience of the

¹In his earlier book *A Modern Economic Growth*, 1966, he defined economic growth "as a sustained increase in per capita or per worker product, most often accompanied by an increase in population and usually by sweeping structural changes."

developed countries since the late eighteenth or early nineteenth century, is characterised by the high rates of increase in per capita product accompanied by substantial rates of population growth. The extremely high rates of increase are at least five times as high for population and at least ten times as high for production as observable in the past.

Professor Kuznets has shown that the rates of population growth of thirteen countries, excluding France, have been high in modern times than in pre-modern times. Leaving France with a population increase of 2.5 per cent per decade, the rates of population growth range from 6.7 per cent for UK, Sweden, Italy, and the USSR, to 8 per cent for Switzerland and Norway, to 10-14 per cent for Denmark, West Germany, Japan and the Netherlands, and to 19-24 per cent for Canada, the United States and Australia.

The decade rates of growth in per capita product of all these developed countries, except Australia with 8 per cent decade rate, are above 13 per cent. They range from 13.5-14.1 per cent for the Netherlands and the UK, to 16-19 per cent for Switzerland, the United States, France, West Germany, Canada, Italy, Norway and Denmark, and to above 26 per cent for Japan, 28.3 per cent for Sweden and 43.9 per cent for the USSR.²

"That modern economic growth meant a striking accelerated rise not only in product per capita but also in population does not imply that the latter was a necessary condition for the former. . . . In some countries high rates of growth in per capita product were accompanied by high rates of population increase, and in others by low rates."³ For instance, rate of growth of population per decade in the USSR was low (6.9 per cent) but the rate of increase in per capita product was the highest, 43.9 per cent. Similar was the case with the UK, Sweden and Italy with low per decade population growth rates of 6.1, 6.7 and 6.8 per cent while their per capita product growth rates per decade were 14.1, 28.3 and 18.7 per cent respectively. If we were to take France, its per capita growth rate was 14.1 per cent against the population increase rate of 2.5 per cent. On the other hand, high population growth rates of 21.6 per cent and 19.1 per cent for the United States and Canada were associated with high per capita product growth rates of 17.2 per cent and 18.1 per cent respectively. "Apparently, other factors—relative availability of natural resources, timing of the inception of the modern growth process, or institutional conditions—complicate the effects of population growth

²S. Kuznets, *Post-War Economic Growth*, Four Lectures, 1964, Table 4.

³S. Kuznets, "Population and Economic Growth," *Proceedings of the American Philosophical Society*, Vol. III, No. 3, June 1967.

and prevent a simple association between it and growth in per capita product, and population growth itself may have both expansive and depression effects on the increase in per capita product that differ in their weight in conjunction with other factors.⁴

High rates of growth of per capita product and population imply high rates of increase in total product. During periods of modern economic growth, the rate of growth per decade in total product was the highest (53.8 per cent) for the USSR followed by the USA (42.5 per cent), Japan (42 per cent) and Canada (40.7 per cent). It was the lowest for France (20.8 per cent) and the UK (21.1 per cent). The growth rates of total product of other countries ranged between 21 and 40 per cent. The divergences between these growth rates "result in enormous multiplication of the total magnitude of performance, a decadal rate of growth of 20 per cent means a multiplication in a century to over 6 times the initial level; a rate of 50 per cent means a rise to about 58 times the initial level."⁵

Taking the non-communist developed countries as a whole, the rates of growth per year over the period of modern economic growth, were almost 2 per cent for per capita product, 1 per cent for population and 3 per cent for total product. These rates roughly mean a multiplication over a century by five for per capita product, by three for population, and by more than fifteen for total product.⁶

2. The Rise In Productivity

Modern economic growth is characterised by a rise in the rate of per capita product due primarily to improvements in the quality of inputs which led to greater efficiency or rise in productivity per unit of input. This is traceable either to an increase in input of resources of labour and capital or to an increase in efficiency, or to both. Increase in efficiency implies greater output per unit of input. According to Kuznets, we find that the rate of increase in productivity is large enough to account for almost the entire growth of product per capita in the developed countries. Even with adjustments to allow for hidden costs and inputs, growth in productivity accounts for over half of the growth in product per capita.

The growth of national product has been due to the enormous addition to population which led to a large increase in labour force. The increase in national product in turn led to a considerable increase in

⁴S. Kuznets, *Modern Economic Growth*, 1966 Data in this chapter are mostly based on this study

⁵Ibid

⁶S. Kuznets, *Economic Growth of Nations: Total Output and Production Structure*, 1971.

capital accumulation and hence in reproducible capital. The proportions of labour force to total population showed an upward trend for all developed countries except Switzerland, Italy and Australia. It was the highest for Denmark (29.4%), followed by the United States (25.2%), Canada (18.3%), Belgium and Germany (15.8%), Sweden (14.6%) and Great Britain (13.1%). "This rise may have been due to a shift in the age structure of the population in favour of working ages, associated with declines in birth rates and in the proportions of population below working age; or to increasing participation of women in gainful occupations...and of the lowering of the age of retirement. Whatever the reason, the proportions of gainfully occupied to total population increased."

But economic growth of developed nations has been accompanied by the long-term decline in number of man-hours per capita. This tendency reflects increase in efficiency or productivity. Leaving the exceptional case of Italy where man-hours per capita declined by 7.5 per cent per decade, the overall decline in man-hours per capita per decade for all other developed countries ranged between 1.1 per cent for Great Britain, 2 to 2.4 per cent for Belgium, Germany, Denmark, Sweden, Norway and the United States, 2.8 to 3.5 per cent for Canada, France and Australia, and 4.1 per cent for Switzerland and 4.5 per cent for Netherlands.

The contribution of capital input to rise in product per capita can be assessed by the trends in the capital-product ratios. The ratio of reproducible capital to national product rose by 11 per cent in the United States (between 1850-1950), 9 per cent in Great Britain (between 1865-1933) and by 7 per cent in Japan (between 1905-35). On the whole, the incremental capital-product ratio rose from 1.6 per cent in the late 19th century and early 20th century to 3.1 per cent in the 20th century for all developed countries.

Further, the net domestic incremental capital-output ratios rose from 2.6 to 3.6 for Sweden, from 4 to 5.1 for Norway, from 2.4 to 2.8 for Denmark and from 2.9 to 5 for Australia between the second half of the 19th century and the first half of the 20th century.

3. High Rate of Structural Transformation

Structural transformations in modern economic growth include the shift away from agriculture to non-agricultural activities and from industry to services, a change in the scale of productive units, and a related shift from personal enterprises to impersonal organization of economic firms, with a corresponding change in the occupational status of labour.

The share of the agricultural sector in total product declined in all

developed countries except Australia. In the case of Great Britain, it declined from 22 per cent in 1841 to 5 per cent in 1955; from 42 per cent between 1872-82 to 9 per cent in 1962 for France; from 49 per cent in 1879 to 9 per cent between 1939-48 for United States; and from 63 per cent between 1878-82 to 14 per cent in 1962 for Japan. Thus by the end of the long periods the share of this sector in total product was less than 10 per cent in the case of UK, France, Germany, Netherlands and the USA, while it ranged between 10 to 26 per cent in Denmark, Norway, Sweden, Italy, Canada, Australia, Japan and the USSR.

On the other hand, the share of the industrial sector rose to more than 50 per cent by the end of the long periods for Great Britain (56%), France (52%), Germany (52%), Netherlands (51%), Norway (53%), Sweden (55%), and the USSR (58%), while it ranged between 22 to 49 per cent for Italy (22%), Australia (30%), United States (42%), Denmark (48%), Canada (48%), and Japan (49%).

So far as the movements in the share of the services sector are concerned, they are neither marked nor consistent among countries. The share of the services sector declined in Sweden and Australia while it rose in Canada and Japan. In other countries, the trend on balance was too small to be significant.⁷

The rapidity of structural transformations in modern economic growth can also be illustrated by the changes in the distribution of labour force among the three major sectors. By the end of the long periods of growth, the share of labour force attached to the agricultural sector was 5 per cent in Great Britain, 12 per cent in the USA, 17 per cent in Australia, 19 per cent in Denmark, Sweden and Canada, 20 per cent in Switzerland and France, and 25 per cent in Norway. But it was high in Japan (33 per cent), and the USSR (40 per cent). Consequently, the share of labour force attached to the industrial sector ranged between 40 to 58 per cent for all countries, except Japan and the USSR, the latecomers in the field of industrialisation. But the share of the services sector in total labour force either remained constant or changed relatively little in Great Britain, Belgium, the Netherlands, Sweden and Australia. But, there was marked absolute and relative rise in Switzerland, Denmark, Norway, Italy, the United States, Canada, Japan and the USSR.

The intersectoral shifts were accompanied by growth in the scale of firms and changes in the type of organisation within sectors such as manufacturing or trade, from small incorporated firms to the large corporate units with the rapid shifts in industrial structure and rapid change in technology. There were also rapid shifts in allocation of

product among types and sizes of producing firms, and consequently in the allocation of labour force. There was high interindustry, interstatus and interoccupational mobility of the labour force among employees from blue-to white-collar jobs, from less to more skilled occupations and from small to large enterprises.⁸

4. Urbanisation

Modern economic growth has been characterised by the movement of an increasing proportion of the population in developed countries from rural areas to urban areas. This is urbanisation. Urbanisation is largely a product of industrialisation. The economies of scale arising from non-agricultural pursuits as a result of technological changes led to the movement of a large proportion of labour and population from the rural to the urban areas. As the technical means of *transportation*, communication and organisation grew more effective, there was the spread of increasing optimum scale units. All these processes affected the grouping of population by social and economic status and transformed the basic pattern of life. The effects of urbanisation on modern economic growth of developed nations led to the decline in birth-rate and the shift toward the small family. It brought people together from different rural areas who initiated and learnt from each other and from those already living in towns. It facilitated the development of impersonal relations of modern life and also taught cooperation. Above all, it created conditions for the intense intellectual activity associated with modern civilisation, and thereby created favourable conditions for the increase in knowledge.⁹

Besides, urbanisation affected the level and structure of consumer expenditure in developed countries in three ways, according to Professor Kuznets. First, urbanisation led to an increasing division of labour, growing specialisation, and the shift of many activities from non-market oriented pursuits within the family or the village to specialised market-oriented firms. "Much food processing, tailoring, dress-making, and even building and repairing of houses, was one time done within the household or by communal efforts within the village; and today a large part is performed by business firms within the urbanised modern society." Second, urbanisation made the satisfaction of an increasing number of wants more costly. Urban life became costlier because of congestion and overcrowding. This created difficulties of housing, sanitation, water, intracity and city transportation and similar basic amenities in the cities. These are the extra costs of urban

⁸Ibid.

⁹S. Kuznets, *Economic Growth and Structure*, 1965.

life which increased consumer expenditure on different types of consumer goods. *Third*, the demonstration effect of the city life led to imitation of consumption patterns by the large immigrants, which led to increased consumer expenditure.¹⁰

5. The Outward Expansion of Developed Countries

The growth of developed countries has been most unequal. Modern economic growth occurred in some nations earlier than it did in others. This was due largely to differences in historical background and antecedents. Thus when modern science and knowledge developed, Industrial Revolution occurred first in England in the second half of the 18th century and later on, it spread to other countries of Europe. Modern economic growth was concentrated in European countries and their offshoots overseas until the entry of Japan, in the late 19th century and of the USSR in the 1930s.

The outward expansion of developed countries with their European origin has been primarily due to the technological revolution in transportation and communication. This led to more direct political dominance over the colonies, the opening up of previously closed areas like Japan and the partition of undivided areas like sub-Saharan Africa. It was the threat of force on the part of the developed countries that led to the spread of growth in Japan and the USSR. On the other hand, the partition of Africa and greater political dominance over the colonies were due to the revival of imperialism which was responsible for the outward expansion of developed countries like Germany and the United States in the last quarter of the 19th century. Thus political or power element in international relations is an important factor in the spread of modern economic growth. This "meant ever-increasing interdependence among nations because of the potential of closer contact and because of the sharing of an increasing number of nations of one and the same transnational stock of knowledge."

Such dependence led to the spread in developed nations of modern education that increased their capacity to exploit and contribute to the available stock of tested and useful knowledge. An important element in this was the use of a common language for increasingly large groups in the developed countries, which led to the sharing of a common body of knowledge and techniques. But the selections of knowledge and techniques made by any one nation depended upon its time of entry into the process of modern economic growth and upon the characteristics specific to that nation with respect to size, natural resources and historical heritage. For instance, the development of shipping in the

¹⁰S. Kuznets, *Modern Economic Growth*, 1965.

economic growth of Norway, of paper and iron in Sweden, and of agricultural products in New Zealand and Australia highlight the importance of these factors in modern economic growth.

But modern economic growth failed to spread to LDCs due to two factors. First, such countries do not possess a stable and flexible political and social framework which may accommodate rapid structural changes and encourage growth-promoting groups in society. Second, the colonial policies followed by the developed countries limit political and economic freedom in LDCs. As a result, the LDCs have failed to take advantage of the spread of modern economic growth and have continued to remain backward with the exception of Japan.

6. International Flows of Men, Goods and Capital

The international flows of men, goods and capital increased from the second quarter of the 19th century to First World War but decline began with First World War and continued to the end of Second World War. There has been, however, rise in some of these flows since the early 1950s. We discuss these flows one by one.

Migration. The cumulative and increasing volume of international migration since the late 1840s and continuing to First World War has an important bearing upon the patterns of modern economic growth. International migrations were at an annual level of over a quarter of a million in 1846-50 and rose to a peak of about 1.5 million in 1906-15. The addition of intercontinental migration would have raised the annual volume of international migration in the decade before First World War to close to 2 million, according to Kuznets' estimates. For the period 1846-1932, 95 per cent of the total intercontinental emigration was from Europe and almost 58 per cent of the total intercontinental immigration between 1821-1932 was to the United States. It is highly significant that the populations of Asia and Africa barely participated in this flow during the 19th and 20th centuries and that 67 per cent of emigrants from Europe went to North America, 6 per cent to Australia and New Zealand, 11 per cent to Argentina and 7 per cent to Brazil. Thus the intercontinental migration was from the older countries of Europe to the younger and emptier countries of North and South America and Oceania.

The factors which led to these international migrations were the easing of intercontinental transportation by steamships and of intracontinental migration in Europe by railways. But migration flows to the United States were due to the pull of better economic conditions. However, in the long-run the push had been an important factor due to the progressive impact of the dislocation produced by the modernisation of agriculture and industry in Europe. This 'push factor' was primarily

responsible for intercontinental migrations from Europe to North and South America, to European colonies in Africa, and offshoots in Oceania.

During and after First World War, international migration almost stopped. First, due to the War, and second, due to the imposition of legal restrictions especially during the depression decade of the 1930s. This phenomenon continued to persist during and after the Second World War and even in the 1950s.

Flows of Goods. Foreign commodity trade has been by far the most dominant component of outward expansion of the developed countries. Two trends are observed in this regard. First, there is the high rate of growth of world trade between 1820s and 1913. Between 1820-30 and 1850-60 and between 1850-60 and 1880-89, the rate of growth was 50 per cent per decade, and about 37 per cent per decade between 1881-85 and 1911-13. Second, the share of the few developed countries in world foreign trade has been high between 1820s and 1913. North-west Europe and the United States accounted for six-tenths in 1820-30 and two-thirds in 1880-89. The share of the same countries with Canada and Australia added was roughly two-thirds between 1881-85 and 1913 but their share declined significantly after First World War.

Between the 1850s and First World War, the proportion of commodity foreign trade to total output rose significantly but by the low rates for the few larger countries. They were Canada, Australia and the United States. But the volume of foreign commodity trade grew more rapidly than the volume of world output. The quantum of world commodity trade tripled between 1850 and 1880 and then tripled again between 1880 and 1913, thus rising to nine times its original level. According to Kuznets, on the assumption that world per capita income doubled over the period, the ratio of world commodity trade to total output would have almost tripled from 1850 to 1913, and the increase was probably greater than that.

Professor Kuznets traces out four factors that led to the greater increase in growth of foreign trade than of domestic output over the decades before First World War in the old developed countries. The first was the revolution in transportation of commodities with the development of steam railroads and ocean transportation. The second was the decision by the United Kingdom to develop free trade and international division of labour. The third was the relaxation of trade barriers by all the developed countries. The last was the opening of the West in the United States, in Canada, Australia and Argentina leading to European specialisation in industry.

But beginning with First World War the rate of growth in the absolute volume of foreign trade declined. In 1913, the index of foreign trade was

about 300 and by 1947-51 it was about 400. Thus between 1913 and 1947-51 world trade increased about a third. On the other hand, in the three decades before First World War it tripled. Since First World War, world population grew by 40 per cent and world per capita income also grew somewhat, therefore the ratio of world trade to world population declined significantly since 1914.

Flows of Capital. International flows of foreign capital investments grew rapidly from the second quarter of the 19th century to First World War. For the three major exporters of capital (Great Britain, France and Germany), capital outflows for the period 1874-1914 averaged between \$0.5 and \$1.1 billion per year at 1913 prices. The increase in the cumulative total of foreign capital invested by these three countries rose from \$4.9 to 35.3 billion over the period at 1913 prices which comes to a rate of growth per decade of 64 per cent.

A substantial portion of these capital flows went to developed countries and was based on political rather than economic considerations. "Of the total foreign investments of Great Britain, almost half were within the empire; of French foreign investments close to half were in Russia, Turkey, the Balkan states, Austria-Hungary, and her colonies; and of Germany's investments, about one-third went to Austria-Hungary, Turkey, Russia and the Balkan states. Although in some cases economic and political considerations may have coincided, in others the line of distinction cannot be drawn sharply, a sizable portion of foreign capital investments was probably motivated by political considerations."

The flows of international capital during the inter-war period were of the order of \$ 110-170 million per year at 1913 prices. While Germany became a net debtor, the United States emerged as a major international lender. Foreign capital investments and flows from the United States increased from \$ 43 million in 1921-29 to \$ 78.1 million in 1930-38 at current prices.

But the decade of the 1950s witnessed important changes in international capital flows. The average volume of capital flows was about \$ 2 billion per year between 1951-55 and \$ 3.3 billion between 1956-61 at 1913 prices. But private capital flows were only 45 per cent of the total during the 1950s, the major being in the form of official donations, loans by governments and international agencies. Another important feature of this decade was the emergence of the United States as the principal lender of the world. Between 1951-55, and 1956-61 the international flows of capital from the United States were \$ 78.4 million and \$ 67.4 million per year at current prices.

But these figures do not present a real picture because these international capital flows constituted small proportions of GNP of the

creditor countries especially after the First World War. For instance, capital exports as a share of GNP of the United Kingdom were 5.3 per cent in 1900-14 which fell to 2.3 per cent in 1921-29 and further to 0.7 per cent in 1950-58. Similarly for the United States, it fell from 2.0 per cent in 1909-28 to 0.4 per cent in 1929-38, rose to 0.9 per cent in 1946-50 and again fell to 0.5 per cent in 1950-59. Thus according to Kuznets, "there was the marked retardation in the expansion of international capital flows in the five-decade period after 1913 as compared with the century that preceded First World War."

CONCLUSION

These six characteristics of modern economic growth are interrelated. They are interwoven in a cause and effect sequence. Given a stable ratio of labour force to total population, there is a high rate of increase in per capita product which implies higher labour productivity. This, in turn, leads to the great rise in per capita product and per capita consumption. The latter, in turn, is the result of advanced technology, and changes in the scale of production of plants, as a result the very character of enterprises changes. These, in turn, produce not only for the domestic market but also for the foreign markets. This is the sequence of modern economic growth that led to its outward spread and expansion in the developed countries before the First World War, between the two World Wars and in the 1950s.

PART TWO

SOME THEORIES OF ECONOMIC DEVELOPMENT

Chapter 6

ADAM SMITH'S THEORY

THE THEORY

Adam Smith is regarded as the foremost classical economist. His monumental work, *An Enquiry into the Nature and Causes of the Wealth of Nations* published in 1776, was primarily concerned with the problem of economic development. Though he did not expound any systematic growth theory, yet a coherent theory has been constructed by later day economists which is explained below.

Natural Law. Adam Smith believed in the doctrine of 'natural law' in economic affairs. He regarded every person as the best judge of his self interest who should be left to pursue it to his own advantage. In furthering his own self interest he would also further the common good. In pursuance of this, each individual was led by an "*invisible hand*" which guided market mechanism. "It is not to the benevolence of the baker but to his self-interest that we owe our bread," said Smith. Since every individual, if left free, will seek to maximise his own wealth, therefore all individuals, if left free, will maximise aggregate wealth. Smith was naturally opposed to any government intervention in industry and commerce. He was a staunch free trader and advocated the policy of *laissez-faire* in economic affairs. The "*invisible hand*"—the automatic equilibrating mechanism of the perfectly competitive market tended to maximise national wealth.

Division of Labour is the starting point of Smith's theory of economic growth. It is division of labour that results in the greatest improvement in the productive powers of labour. He attributed this increase in productivity: (1) to the increase in the dexterity of every worker; (2) to the saving in time to produce goods; and (3) to the invention of large number of labour-saving machines.¹ The last cause of increase in productivity stems not from labour but from capital. It is improved

¹Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, (ed.) E. Cannan, p. 7.

technology that leads to division of labour and the expansion of the market. But what leads to division of labour is a certain propensity in human nature—the propensity to truck, barter and exchange one thing for another. Division of labour, however, depends on the size of the market. One of his famous sayings that 'the division of labour is limited by the extent of the market' implies that the division of labour increases with the extension of the market. For this purpose, expansion of commerce and international trade is especially beneficial. With the increase in population and transport facilities, there is bound to be greater division of labour and increase in capital.

Process of Capital Accumulation. Smith, however, emphasized that capital accumulation must precede the introduction of division of labour. Like the modern economists, Smith regarded capital accumulation as a necessary condition for economic development. So the problem of economic development was largely the ability of the people to save more and invest more in a country. The rate of investment was determined by the rate of saving and savings were invested in full. But almost all savings resulted from capital investments or the renting of land. So only capitalists and landlords were held to be capable of saving. The labouring classes were considered to be incapable of saving. This belief was based on the 'Iron Law of Wages'. The classical economists also believed in the existence of a wages fund. The idea is that wages tend to equal the amount necessary for the subsistence of the labourers. If the total wages fund at any time becomes higher than the subsistence level, the labour force will increase, competition for employment will become keener and wages will come down to the subsistence level. In such a situation, some of the workers will find it difficult to pull on below an accustomed normal living standard. They will, therefore, be unable to marry or bring up children. The working force will be reduced and competition among the capitalists for employing workers would tend to raise wages. Thus, Smith believed that "under stationary conditions, wage rates fall to the subsistence level, whereas in periods of rapid capital accumulation, they rise above this level. The extent to which they rise depends both upon the rate of accumulation and upon the rate of population growth."² The wages fund was, however, built up of savings and was utilized for hiring labour through investments. He believed that savings found their way into investment more or less automatically. Thus the wages fund could be increased by increasing the rate of net investment.

Why Do Capitalists Make Investments? According to Smith, investments were made because the capitalists expected to earn profits on

²G M Meier and E. Bakewell, op. cit., p. 23.

them; and the future expectations with regard to profits depended on the present climate for investment as well as actual profits. But what is the behaviour of profits during the development process? Smith believed that profits tended to fall with economic progress. When the rate of capital accumulation increases, increasing competition among capitalists raises wages and tends to lower profits. In fact, it is the increasing difficulty of finding new profitable investment outlets that leads to falling profits.

Regarding the role of interest rate in economic development, Smith wrote that with the increase in prosperity, progress, and population, the rate of interest falls, and as a result the supply of capital is augmented. The reason being that with the fall in interest rate the moneylenders will lend more to earn more interest for the purpose of maintaining their standard of living at the previous level. Thus the quantity of capital for lending will increase with the fall in the rate of interest. But when the rate of interest falls considerably the moneylenders are unable to lend more in order to earn more to maintain their standard of living. Under the circumstances they will themselves start investing and become entrepreneurs. Thus, even with the fall in the rate of interest there is increase in capital accumulation and economic progress.

So far as rent is concerned, Smith believed that economic progress involves rise in money as well as real rentals, and a rise in rental share of national income. This is because the interests of landowners are closely connected with the general interest of society.

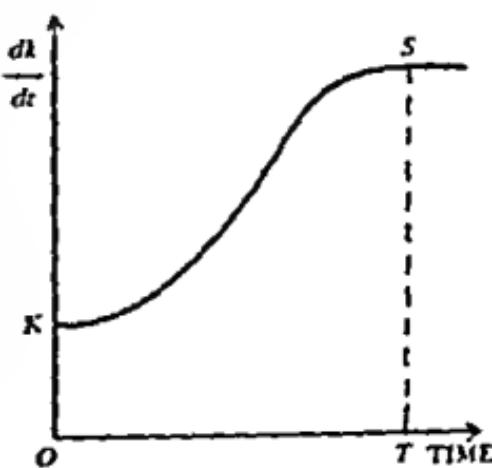
Agents of Growth. According to Smith, farmers, producers and businessmen are the agents of economic progress. It was free trade, enterprise and competition that led farmers, producers and businessmen to expand the market which, in turn, made economic development possible. The functions of these three are interrelated. To Smith, development of agriculture leads to increase in construction works, and commerce. When agricultural surplus arises as a result of economic development, the demand for commercial services and manufactured articles rises. This leads to commercial progress and the establishment of manufacturing industries. On the other hand, their development leads to increase in agricultural production when farmers use advanced production techniques. Thus capital accumulation and economic development take place due to the emergence of the farmer, the producer and the businessman.

Process of Growth. "Taking institutional, political and natural factors for granted, Smith starts from the assumption that a social group—we may call it a "nation"—will experience a certain rate of economic growth that is accounted for by increase in numbers and by saving. This induces a "widening of market" which in turn increases division of

labour and thus increases productivity... In this theory the economy grows like a tree. This process is no doubt exposed to disturbances by external factors, that are not economic,...but in itself it proceeds steadily, continuously. Each situation grows out of the preceding one in a uniquely determined way, and the individuals whose acts combine to produce each situation count individually for no more than the individual cells of a tree."³ According to Smith, this process of growth is cumulative. When there is prosperity as a result of progress in agriculture, manufacturing industries and commerce, it leads to capital accumulation, technical progress, increase in population, expansion of markets, division of labour and rise in profits continuously. All this happens in Smith's *progressive state* which "is in reality the cheerful and the hearty state to all the different orders of the society."

Stationary State. But this progressive state is not endless. It ultimately leads to a stationary state. It is the scarcity of natural resources that finally stops growth. In such an opulent state, the competition for employment would reduce wages to the subsistence level and competition among businessmen would bring profits as low as possible. Once profits fall, they continue to fall. Investment also starts declining and in this way the end result of capitalism is the stationary state. When this happens, capital accumulation stops; population becomes stationary; profits are the minimum, wages are at the subsistence level; there is no change in per capita income and production, and the economy reaches the state of stagnation. According to Smith, the stationary state is dull, the declining melancholy. Life is hard in the stationary state for the different sections of the society and miserable in the declining state. All this happens in a free market economy.

Smith's theory is explained in terms of Fig. 6.1 where time is taken on the horizontal axis and rate of accumulation, on dk/dt , on the vertical axis. The economy grows from K to S during the time path T. After T, the economy reaches the stationary state linked to S where further growth does not take place because wages rise so high that profits become zero and capital accumulation stops.



A Critical Appraisal

Smith's theory has the great

FIG. 6.1

merit of pointing out 'how economic growth came about and what factors and policies impede it.' In particular, he pointed out the importance of parsimony in saving and capital accumulation; of improved technology, division of labour and expansion of market in production; and of the process of balanced growth in the interdependence of farmers, traders and producers. Despite these merits, it has certain weaknesses.

1. **Rigid Division of Society.** Smith's theory is based on the socio-economic environment prevailing in Great Britain and certain parts of Europe. It assumes the existence of a rigid division of society between capitalists (including landlords) and labourers. But the middle class occupies an important place in modern society. Thus, this theory neglects the role of the middle class which provides the necessary impetus to economic development.

2. **One-sided Saving Base.** According to Smith, capitalists, landlords and moneylenders save. This is, however, a one-sided base of savings because it did not occur to him that the major source of savings in an advanced society was the income-receivers and not the capitalists and landlords.

3. **Unrealistic Assumption of Perfect Competition.** Smith's whole theory is based upon the unrealistic assumption of perfect competition. This *laissez-faire* policy of perfect competition is not to be found in any economy. Rather, a number of restrictions are imposed on the private sector, and on internal and international trade in every country of the world.

4. **Neglect of Entrepreneur.** Smith neglects the role of the entrepreneur in development. This is a serious defect in his theory. The entrepreneur is the focal point of development, as pointed out by Schumpeter. It is the entrepreneur who organises and brings about innovations thereby leading to capital formation.

5. **Unrealistic Assumption of Stationary State.** Smith is of the view that the end result of a capitalist economy is the stationary state. It implies that there is change in such an economy but around a point of equilibrium. There is progress but it is steady, uniform and regular like a tree. But this explanation of the process of development is not satisfactory because development takes place by 'fits and starts' and is not uniform and steady. Thus the assumption of the stationary state is unrealistic.

6. **Static Model.** According to Hicks, Smith's model, though it looks like a growth model, is not a growth model in the modern sense. It does not exhibit a sequence.⁴ Thus it a static model.

⁴J. Hicks, *Capital and Growth*, 1965.

Its Applicability to Underdeveloped Countries

The Smith theory of economic development has limited validity for underdeveloped countries. In such economies the size of the market is small. As a result, the capacity to save and inducement to invest are low. The size of the market is determined by the volume of production. This in turn depends on the level of income 'Capacity to buy means capacity to produce' here. And productivity, to a certain extent, depends on the degree to which capital is employed in production. Since the size of the market is small, productivity is low, and low productivity implies low level of income. The low level of income results in small capacity to save and inducement to invest and they keep the size of the market small. To use the Keynesian terminology, the level of real income is low in underdeveloped countries but the propensity to consume is very high and every increase in income is spent on food products. Little is saved and invested. The volume of production remains at a low level. Consequently, the size of the market remains small.

Moreover, the political, social and institutional assumptions underlying Smith's theory are not applicable to the conditions prevailing in underdeveloped countries. *Laissez-faire* has lost its significance in such economies. Competition has been gradually replaced by monopoly which has tended to perpetuate and strengthen the vicious circles of poverty. Therefore, development is possible through government intervention rather than through a policy of *laissez-faire*.

Despite this, Smith's theory of economic development points toward certain factors that are helpful in the process of developing underdeveloped countries. Farmers, traders and producers, the three agents of growth mentioned by Smith, can help in developing the economy by raising productivity in their respective spheres. In the absence of a free market economy in underdeveloped countries, the state can induce them to produce more, as is being done in India. Their interdependence also points toward the importance of balanced growth for such economies.

In particular, Smith extolled the virtues of saving which is regarded as a crucial factor for capital formation in underdeveloped countries. He wrote, "Every prodigal appears to be a public enemy, and every frugal man a public benefactor."

Further, his emphasis on improved technology, division of labour and expansion of market in the process of development has become the corner stone of policy in such countries. As aptly remarked by Rostow, indeed looked at from the present day, the *Wealth of Nations* is a dynamic analysis, and programme of policy for an underdeveloped country.

Chapter 7

THE RICARDIAN THEORY

INTRODUCTION

Like Smith, David Ricardo also presented his views on economic development in an unsystematic manner in his book *The Principles of Political Economy and Taxation*. This book was published in 1917 and it was its third edition of 1921 and Ricardo's correspondence with a number of economists that contain his ideas on which his model of development has been built.

RICARDO'S THEORY

Ricardo never propounded any theory of development. He simply discussed the theory of distribution. Therefore, Ricardo's analysis is a detour. The Ricardian theory is based on the marginal and the surplus principles. The marginal principle explains the share of rent in the national output, and the surplus principle explains the division of the remaining share between wages and profits.

Assumptions of the Theory. The Ricardian theory is based on the following assumptions:

- (i) that all land is used for the production of corn and the working forces in agriculture help in determining distribution in industry;
- (ii) that the law of diminishing returns operates on land;
- (iii) that the supply of land is fixed;
- (iv) that the demand for corn is perfectly inelastic;
- (v) that labour and capital are variable inputs;
- (vi) that capital consists of circulating capital;
- (vii) that there is capital homogeneity;
- (viii) that the state of technical knowledge is given;
- (ix) that all workers are paid a subsistence wage;
- (x) that the supply price of labour is given and constant;
- (xi) that the demand for labour depends upon the accumulation of capital; and that both demand- and supply-price are independent of the marginal productivity of labour;
- (xii) that there is perfect competition;
- (xiii) that capital accumulation results from profits.

In the Ricardian system, the whole economy consists of one huge farm fixed in supply which is engaged in producing only corn by applying homogeneous units of labour and capital. It grows on the basis of interrelations of three groups in the economy. They are landlords, capitalists and labourers, among whom the entire produce of land is distributed. The total national output is distributed among the three groups as rent, profits, and wages respectively.

Division of Rent, Profits and Wages. Given the total output of corn, the share of each group can be determined. Rent per unit of labour is the difference between the average and marginal product. Or, total rent equals the difference between the average product and the marginal product of labour \times (multiplied by) the quantity of labour and capital applied on land. The wage rate is determined by wage fund \div (divided by) the number of workers employed at the subsistence level. Thus, out of total corn produced and sold, rent has the first right and the residual (produce minus rent) is distributed between wages and profits, while interest is included in profits.¹

Process of Capital Accumulation. According to Ricardo, capital accumulation is the outcome of profits because profits lead to saving of wealth which is used for capital formation. Capital accumulation depends on two factors: First, the capacity to save; and second, the will to save. The capacity to save is more important in capital accumulation. This depends upon the net income of society which is a surplus out of total output after meeting the cost of workers' subsistence. The larger is the surplus, the larger will be the capacity to save. As Ricardo said, "Out of two loaves I may save one, out of four I may save three." Landlords and capitalists invest through this surplus. The size of this surplus of net income depends on the rate of profit.

(i) **The Profit Rate.** The rate of profit = profits/wages i.e., the rate of profit is equal to the ratio of profits to capital employed. But since capital consists only of working capital, it is equal to the wage bill. So long as the rate of profit is positive, capital accumulation will continue. The labour force will grow proportionately and the total wage fund will also increase. In reality, profits depend on wages, wages on the price of corn and the price of corn depends on the fertility of the marginal land. In this way, there is an inverse relation between profits and wages, and wages rise or fall in keeping with the price of corn. When there are improvements in agriculture, the productive power of land increases, or by applying better machines less workers produce more output. This results in fall in the price of corn. As a result, the subsistence wage also falls, but profits increase and there is more capital accumulation. This

¹See Fig. 7.1 for its clarity

will increase the demand for labour and the wage rate will rise. This, in turn, will increase population and the demand for corn and its price. Thus wages will rise and profits decline.

(ii) **Increase in Wages.** Ricardo tried to show that it is only under different conditions that capital accumulation will reduce profits. In the Ricardian system wages play an active role in determining income between capital and labour. The wage rate increases when the prices of commodities forming the subsistence of the workers increase. The commodities consumed by workers are primarily agricultural products. As the demand for food increases, less fertile land is brought under the plough. For this purpose, to produce a unit of the product more labourers are required. The demand for labour starts rising which raises wages. Moreover, to match the increasing cost of subsistence, money wages will also continue to rise. Thus wages rise with the increase in the price of corn and then profits decline. In such a situation, rent also increases which absorbs the rise in the price of corn. Since wages also increase, profits decline. These opposite tendencies ultimately retard capital accumulation.

(iii) **Declining Profits in Other Industries.** According to Ricardo, "The profits of the farmer regulate the profits of all other trades." Therefore, the money rate of profit earned on capital must be equal in equilibrium both in agriculture and industry. In manufacturing industry, corn is used as an input and the equality in the rate of profit comes through a definite relationship between the prices of industrial goods and the price of corn. Thus, when the profit rate declines in the agricultural sector, it also declines in the manufacturing industry. For with the rise in the price of corn, the industry will have to raise the wages of labourers, thereby reducing profits. Thus the price of corn determines the rate of profit in industry. When profits decline in the agricultural sector, profits of all trades also decline.

Other Sources of Capital Accumulation. According to Ricardo, economic development depends on the difference between production and consumption. He therefore lays emphasis on increasing production and reducing unproductive consumption. However, the productivity of labour may be increased through technological changes and better organisation. It is in this way that capital accumulation can also be increased. But the use of more machines will employ less workers. This will lead to unemployment and reduced wages. Since the economic condition of the workers worsens with the employment of more machines, Ricardo regards technological conditions as given and constant.

(i) **Taxes** are a source of capital accumulation in the hands of the government. According to Ricardo, taxes are to be levied only to reduce

conspicuous consumption. Otherwise, the imposition of taxes on capitalists, landlords, and labourers will transfer resources from these groups to the government. But taxes adversely affect investment. Therefore, Ricardo does not favour the imposition of taxes because taxes reduce income, profits and capital accumulation.

(ii) Ricardo is in favour of free trade. Free trade is an important factor for the economic development of the country. The profit rate can be saved from declining by importing corn. The capital accumulation will, therefore, continue to be high. In this way, the resources of the world can be used more efficiently through foreign trade. But the import of corn leads to fall in the demand for labour which deteriorates the economic condition of labourers. On the other hand, landlords and capitalists do not think it fit to import cheap corn from foreign countries, as a result their profits decline.

Ricardo's theory has been illustrated in Fig. 7.1 where quantities of corn are measured on the vertical axis and the amount of labour employed in agriculture on the horizontal axis. The curve AP represents the average product of labour and MP the marginal product of labour. With OM amount of labour, $OQRM$ total corn is produced. Rent is shown by the rectangle $PORT$, as the difference between AP and MP . At the subsistence wage rate OW , the supply curve of labour WL is infinitely elastic, and the total wage bill is $OWLM$. Total profits, WPL , are the residue after deducting rent and wages from the total output

$$WPL = OQRM - (PORT - OWLM).$$

Stationary State. According to Ricardo, there is a natural tendency for the profit rate to fall in the economy so that the country ultimately reaches the stationary state. When capital accumulation rises with increase in profits, total output increases which raises the wages fund. With the increase in the wages fund, population increases which raises the demand for corn and its price. As population increases, inferior grade lands are cultivated to meet the increasing demand for corn. Rents on the superior grades of land rise and absorb a greater share of the output produced on these lands. This reduces the share

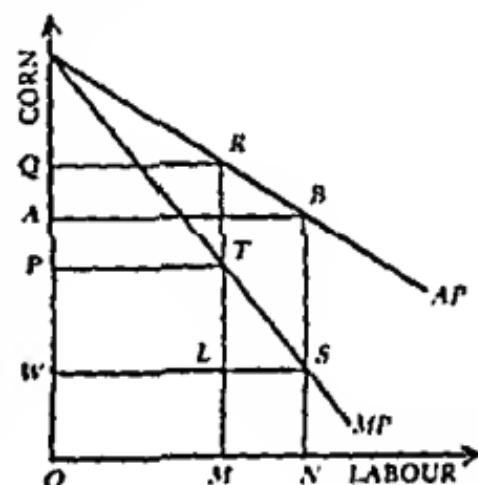


FIG. 7.1

and labourers. Profits decline and wages tend to fall to the subsistence level. This process of rising rents and declining profits continues till the output from the marginal land just covers the subsistence wage of the labour employed. Then profits are zero. This situation is explained in the above figure. During the course of capital accumulation, the amount of labour increases from OM to ON and the total output from $OQRM$ to $OABN$. Of this, $OWSN$ is the total wage bill (fund) and $WABS$ is the rent. There are no profits at all. The stationary state arrives. In this

state, capital accumulation stops, population does not grow, the wage rate is at the subsistence level and technical progress ceases. "The basic causal force in this scheme is the fact of diminishing returns in agriculture, a grim tendency which can only be postponed temporarily by technical progress. But technical progress cannot prevent the ultimate disappearance of profit

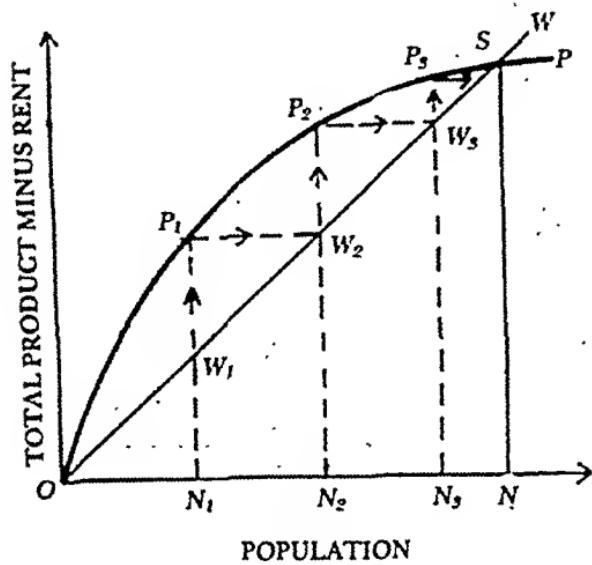


FIG. 7.2

and the onset of the stationary state."

The movement towards the stationary state in the Ricardian model is explained in terms of Fig. 7.2. Population is measured along the horizontal axis and the total product minus rent on the vertical axis. The curve OP is the production function which shows total production minus rent as the function of population. As population increases, the OP curve flattens out due to the operation of the law of diminishing returns. The ray through the origin OW measures the constant real wage rate. The vertical distance between the horizontal line OX and the wage rate line OW measures the total wage bill at different levels of population. Thus W_1N_1 , W_2N_2 , and W_3N_3 are the total wage bills at ON_1 , ON_2 , and ON_3 levels of population. When the wage bill is W_1N_1 , the profits are P_1W_1 . (Total product minus rent ÷ the total wage bill, i.e., $P_1N_1 \div W_1N_1 = P_1W_1$.) When profits are P_1W_1 , investment is encouraged. The demand for labour increases to ON_2 , which pushes up the wage bill to W_2N_2 but profits decline to P_2W_2 . This will encourage further investment and technical progress and raise the demand for labour to ON_3 and the wage bill will also increase to W_3N_3 . But the

profits will decline to P_3W_3 . This process of capital accumulation, increase in population and the wage hill will continue till profits disappear altogether at point S from where the stationary state sets in.

A Critical Appraisal

Ricardo was the forerunner of modern economists and his ideas on economic development have been adopted by them. He emphasised the importance of raising savings and profit rate for capital accumulation. But it has certain flaws which are discussed below:

1. Neglects the Impact of Technology. Ricardo pointed out that improved technology in the industrial field leads to the displacement of labour and other adverse consequences. In the beginning, technological progress might counteract the action of diminishing returns. But ultimately when the impact of technological progress is exhausted, diminishing returns set in and the economy moves towards the stationary state. Thus, the Ricardian theory is primarily based on the law of diminishing returns. Rapid increase of farm produce in the advanced nations has proved that Ricardo underestimated the potentialities of technological progress in counteracting diminishing returns to land. Ricardo gave unnecessary importance to the law of diminishing returns and failed to visualize the important impact that science and technology had on the rapid economic development of the now developed nations.

2. Wrong Notion of the Stationary State. The Ricardian view that the state reaches the stationary state automatically is baseless, because no economy attains the stationary state in which profits are increasing, production is rising and capital accumulation is taking place.

3. Baseless Notion Regarding Population. The Ricardian view that the wage rate does not increase with the rise in population has been disproved. First, the Malthusian theory of population has been proved wrong by population trends prevailing in the Western World. Second, wages have not tended to be at the subsistence level. Rather, there has been a continuous increase in money wages, and population has tended to decline.

4. Impracticable Laissez-Faire Policy. The Ricardian theory is based on the impracticable notion of *laissez-faire*. According to this policy, there is no government interference and the economy operates automatically through perfect competition. In reality, there is no economy which is free from government interference and in which perfect competition prevails.

5. Neglects Institutional Factors. One of the principal defects of the Ricardian theory is that it neglects the role of institutional factors. They have been assumed as given. But they are crucial in economic

development and cannot be overlooked.

6. Distribution Rather than Growth Theory. According to Schumpeter, the Ricardian theory is not a growth theory but is a theory of distribution which determines the shares of workers, landlords and capitalists. Even in this, he regards the share of land as primary, and the residual as the share of labour and capital. Ricardo failed to present a functional theory of distribution because he did not determine the share of each factor separately.

7. Land also Produces Goods other than Corn. Ricardo believed that only one product corn is produced on land. But this is an old notion because land produces a variety of products other than corn. This view appears to be still obsolete when Ricardo opined that the other factors of production are supported only by the produce of land.

8. Capital and Labour not Fixed Coefficients. The Ricardian assumption that capital and labour are fixed coefficients of production, is not correct. This assumption is invalid because labour and capital are independent variables.

9. Neglects the Interest Rate. The most serious defect of the Ricardian theory is the neglect of the rate of interest in economic growth. He does not regard the interest rate as an independent reward of capital but includes it in profits. This wrong notion stems from his inability to distinguish between the capitalist and the entrepreneur.

10. Static Model. According to Hicks, Ricardo uses the static method for the analysis of a dynamic process by confining himself to circulating capital and capital homogeneity. The Ricardian model is not one of a regularly progressive economy. It is confined to the comparison of static equilibria of even stationary states, and therefore cannot be extended to the analysis of a dynamic process.²

Underdeveloped Countries and Ricardo's Theory

Despite these weaknesses, the Ricardian theory points toward the importance of capital accumulation through agricultural development, and increase in the various sources of savings and the profit rate. The Ricardian theory may not be fully applicable to underdeveloped countries but it does point out the factors that retard their rate of economic growth. The two basic assumptions of the Ricardian theory, diminishing returns to land and the Malthusian principle of population, are of particular significance for understanding the problems of over-populated underdeveloped economies.

In an underdeveloped country, population increases faster than the increase in food supply. There is land hunger but there is the absence of

²J. Hicks, *Capital and Growth*, 1965.

technical improvements on land. As a result, the law of diminishing returns works with full force and productivity falls. The supply of cultivable land being scarce in relation to its demand, rents are high. But wages are low, because the labour supply is in excess of its demand and there is little tendency to substitute capital for labour. Under such circumstances, the level of income is low and there is little capacity to save and inducement to invest.

Chapter 8

THE MALTHUSIAN THEORY

INTRODUCTION

Thomas Robert Malthus, with whose name the famous Malthusian theory of population is associated, 'showed more appreciation than most of his contemporaries of the importance of distinct and systematic theory of growth.'¹ His ideas about economic development are found in Book II entitled "The Progress of Wealth" of his *Principles of Political Economy* published in 1820.²

THE THEORY

Concept of Development. Malthus did not regard the process of economic development as automatic. Rather, it required consistent efforts on the part of the people. He did not conceive of any movement towards the stationary state but emphasised that the economy reached the slump many times before attaining the optimum level of development. Thus for him, the process of development was one of ups and downs of economic activity rather than smooth.

Malthus was concerned with the "progress of wealth" of a country. By progress of wealth, he meant economic development which could be achieved by increasing the wealth of a country. The wealth of a country depended partly upon the quantity of produce obtained by its labour, and partly upon the valuation of this produce. But "the wealth of country does not always increase in proportion to the increase in value, because an increase in value may sometimes take place under an actual diminution of commodities."

Population Growth and Economic Development. In his *Principles of Political Economy*, Malthus was more realistic in his analysis of population growth in the context of economic development than in his *Essay of Population*. According to him, population growth by itself is not sufficient to bring about economic development. Rather, it is the result of the development process. As Malthus wrote: "An increase of population cannot take place without proportionate increase of

¹B. Higgins, *op. cit.*, p. 99.

²T.R. Malthus, *Principles of Political Economy*, 2e, 1836. Reprinted 1951.

wealth." As the rate of capital accumulation increases, the demand for labour also increases. This encourages population growth. But mere population growth does not increase wealth. Population growth increases wealth only if it increases effective demand. And it is increase in effective demand which leads to increase in wealth.

Role of Production and Distribution. Malthus regarded production and distribution as "the two grand elements of wealth." If they are combined in right proportions, they can increase the wealth of a country in a short time. But if they are taken separately or combined in undue proportions, they may take many thousand years to increase wealth. So Malthus emphasises maximum production and optimum allocation of resources for increasing the wealth of a country during the short run.

Factors In Economic Development. Malthus defined the problem of economic development as one of explaining the difference between potential gross national product ("power of producing riches") and actual gross national product ("actual riches"). But the principal problem is one of achieving a high level of potential gross national product.

According to Malthus, the size of potential gross national product depends upon land, labour, capital and organisation. When these four factors are employed in right proportions, they maximise production in the two major sectors of the economy viz., the agricultural and the industrial sector. It is the accumulation of capital, the fertility of the soil, and technological progress that lead to increase in both agricultural and industrial production. Besides these, Malthus also emphasized the importance of non-economic factors in economic development "which come under the head of politics and morals." They are the security of property; good constitution and excellent laws properly administered, and hard working and regular habits and general rectitude of character.

Process of Capital Accumulation. Of all the factors, it is the accumulation of capital which is the most important determinant of economic development. The source of capital accumulation is higher profits. Profits come from the savings of capitalists because workers are too poor to save. If capitalists save more and spend less on consumer goods in order to have larger profits, economic growth will be retarded.

In fact, Malthus suggested a concept of the "optimum propensity to save." To Malthus this meant "saving from the stock which might have been destined for immediate consumption, and adding to that which is to yield a profit; or in other words . . . the conversion of revenue into capital." Thus his conclusion is that "saving, pushed to excess, would destroy the motive to production."

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Deficiency of Effective Demand. This view of Malthus is based on his denial of Say's Law of Markets and belief in the deficiency of effective

demand. Malthus does not agree with Say that there cannot be a general over-production or glut in the market. According to him, it is not at all true that commodities are always exchanged for commodities. In fact, the great mass of commodities is exchanged directly for labour rather than for commodities. Since workers, who are consumers, receive less than the value of the product they produce, they cannot buy all commodities. Thus there is an excess supply of commodities in the market in relation to the demand. This gap between supply and demand cannot be filled even by the demand of capitalists. Capitalists believe in parsimony and "deprive themselves of their usual conveniences and luxuries to save from their revenue and add to their capital". By being parsimonious, they employ more productive workers who are consumers and, in turn, are not able to buy all commodities they produce. Thus there is general over-production and glut of commodities in the market due to the deficiency of effective demand or under-consumption. This leads to fall in prices, profits, saving, investment and capital accumulation.

Economic Stagnation. Malthus believed that the supply of labour is inelastic in the short run. He wrote: "From the nature of population, an increase of labourers cannot be brought into the market, in consequence of a particular demand, till after the lapse of sixteen or eighteen years." But the supply of capital can be increased faster than the increase of population. As capitalists invest on productive labour to increase the supply of capital, wages rise due to competition. Rise in wages do not increase effective demand because workers prefer leisure to increased consumption. So there is a general glut of commodities. As a result, prices fall, profits decline, investment falls, and both the power of accumulation and the motive to accumulation are strongly checked. Thus gluts and underconsumption would lead to economic stagnation.

Measures to Promote Economic Development. However, Malthus made several policy recommendations to promote economic development.

(1) *Balanced Growth.* In the Malthusian system, the economy is divided into the agricultural and the industrial sectors. It is technological progress in these two sectors that can lead to economic development. Capital is invested in agriculture until all the arable land is brought under cultivation, stocked and improved. After that there are no more opportunities for profitable investment in that sector due to diminishing returns. Therefore, investment opportunities exist only in the industrial sector. Diminishing returns to increased employment in the land can be avoided only if technical progress in the industrial sector is rapid enough, and if investment takes place to absorb most of the population growth in the industrial sector and to reduce the cost of living of workers.

on the land, permitting reduction in their wage rates.⁷ Thus Malthus favoured balanced growth of both the agricultural and industrial sectors for the economic development of the country.

(2) *Raising Effective Demand.* But technical progress alone cannot lead to economic development unless effective demand increases. Malthus suggested a number of measures to increase effective demand. *First*, by more equitable distribution of wealth and landed property. "Thirty or forty proprietors with incomes averaging between one thousand and five thousand a year, would create a much more effective demand for wheat, bread, good meat, and manufactured product, than a single proprietor possessing a hundred thousand a year." Thus Malthus believed that a few moderately rich people can raise effective demand more than one millionaire among the poor masses. Further, he favoured a more equitable distribution of landed property for that would increase effective demand as well as production. According to Malthus, if the division of land into small proprietors is carried to an extreme, it would adversely affect production.

Second, effective demand can be increased by the expansion of the internal and external trade. It is internal as well as external trade that increases wants and tastes and the desire to consume, "which are absolutely necessary to keep up the market prices of commodities and prevent the fall of profits." Internal and external trade also increase the value of products by exchanging "what is wanted less for what is wanted more".

Third, Malthus suggested the maintenance of "unproductive consumers" to increase effective demand. He defined unproductive consumers as those persons who did not produce material objects. It is underconsumption which leads to gluts and stagnation in the country. Therefore, production can be raised by increasing consumption. Since capitalists are parsimonious and productive workers live upon subsistence wages, "unproductive consumption" upon the part of unproductive labourers and landlords will increase effective demand.

Lastly, Malthus suggested public works schemes to remove unemployment and increase effective demand. Malthus pointed out that "the employment of the poor in roads and public works and a tendency among landlords and persons of property to build, to improve and beautify their grounds, and to employ workmen and menial servants are the means . . . to remedy the evils arising from that disturbance in the balance of produce and consumption." But he himself noted two weaknesses of this measure. *First*, it might prevent labour from "gradually accommodating itself to a reduced demand." He does

⁷B Higgins, op. cit., p. 103

that it could be remedied by giving low wages to workers. Second, it would necessitate increase in taxes to finance public works which would reduce private investment. But this weakness was in fact the advantage of public works because it would not have the tendency to diminish the capital employed by productive labour.

Conclusion. To sum up, in the Malthusian theory it is underconsumption or deficiency in effective demand leading to gluts which is the main cause of underdevelopment. For development, the country should maximise production in the agricultural and industrial sectors of the economy. This requires technical progress, equitable distribution of wealth and land, expansion of internal and external trade, increase in unproductive consumption, and increase in employment opportunities through public works schemes. Besides, there are non-economic factors like education, moral standards, hard working habits, good administration and efficient laws which help in increasing production in the two sectors of economy. Thus these economic and non-economic factors lead to economic development.

A Critical Appraisal

Keynes "claimed Robert Malthus as the first of the Cambridge Economists." Rightly so. For he was Keynes's precursor. He also anticipated Kalecki. It was Malthus who denied Say's Law of Markets and laid emphasis upon the importance of effective demand. He pointed out the factors which hinder and promote economic development. In particular, he pointed out the importance of technological progress, equitable distribution of wealth, internal and external trade, public works programme, good administration, hard work, and balanced growth. These measures have come to be recognised as the main planks of modern economic growth.

Despite all these virtues, Malthus's theory has certain weaknesses.

1. **Secular Stagnation not Inherent in Capital Accumulation.** Malthus argues that the process of capital accumulation leads inherently to secular stagnation. This is a wrong notion which arises from his interpretation of Say's law. For Malthus there is the possibility of permanent underconsumption of all commodities. But the fact is that underconsumption is not a permanent phenomenon but a temporary one. So secular stagnation is not inherent in the process of capital accumulation.

2. **Negative View of Capital Accumulation.** Malthus's view that capital accumulation leads inherently to secular stagnation, is not correct from another angle. In actuality, capital accumulation does not lead to a reduction in the demand for consumer goods and fall in profits. As capital accumulation increases, the shares of wages and profits in

aggregate income increase, and so does the demand for consumer goods. Thus Malthus had a negative view of the process of capital accumulation.

3 Commodities not Exchanged for Commodities Directly. Again, Malthus, in denying Say argues that commodities are not exchanged for commodities, but they are exchanged for labour. In fact, labour is not a correct measure of commodities. In the real world, commodities are measured by real tangible prices and not by labour.

4. Unproductive Consumers Retard Progress. Another serious weakness of Malthus's theory is that he suggests spending by "unproductive consumers" to overcome underconsumption and increase effective demand. This remedy tantamounts to giving doles to workers and deliberately supporting idle persons. Such a measure slows down the rate of capital accumulation.

5 One-Sided Saving Base. Like Smith, Malthus had a one-sided base of savings. He believed that it is only the landlords who save. But this is an erroneous view because the major source of savings in a society is the income-earners and not profit-earners.

Its Applicability to Underdeveloped Countries

Malthus was one of the pioneers in the field of economic development who wrote about the poverty and underdevelopment of underdeveloped countries of his times in his *Principles of Political Economy*. He wrote about the economic backwardness of such countries as Spain, Portugal, Hungary, Turkey, Ireland, together with nearly the whole of Asia and Africa, and of Latin American countries. Hence his theory of economic development has more relevance to underdeveloped countries of today than the theories of other classical writers.

Malthus's division and analysis of an economy into the agricultural sector and the industrial sector is highly realistic in the context of underdeveloped countries. Underdeveloped countries are dualistic economies where the agricultural sector lags behind the industrial sector. Despite technological progress the former sector is subject to the law of diminishing returns. The latter sector operates under the law of increasing returns. Consequently, the agricultural sector retards the progress of the industrial sector.

His analysis of the causes of poverty is highly realistic in the context of the present day underdeveloped countries. For him, poverty of the peasantry is not due to the scarcity of fertile land. It is found because peasants do not have capital to make improvements on land. On the other hand, large landowners do not practise intensive cultivation due to the small size of the market. Since the bulk of the population subsists on labour-intensive agriculture, it is poor. Therefore, its demand for

industrial output is low. The industrial sector remains limited in size and it fails to provide sufficient employment. Thus each sector acts as a drag on the growth of the other. Consequently peasants, landlords, workers and industrialists have a backward sloping supply curve of effort. The above analysis of Malthus appears like the conditions prevailing in any backward country of Asia, Africa or Latin America.

The relation which Malthus established between population growth and economic development is fully applicable to underdeveloped countries. According to him, in countries where population alone increases, the increase in wealth is the slowest. This has been amply proved true in the Asian and African countries.

The views of Malthus relating to factors which promote development are fully applicable to underdeveloped countries. None can deny the role of production, optimum distribution, capital accumulation, the fertility of soil, and technological progress, and of such non-economic factors as good administration, excellent laws, hard work, honesty of character, etc. in promoting the development of such countries.

Besides, some of the policy measures suggested by Malthus are also applicable to underdeveloped countries. He stressed the importance of structural changes to diminish the relative importance of agriculture; of land reforms; of balanced growth of agriculture and industry; of expanding internal and external trade to widen the market; of equitable distribution of wealth and land; and of public works programme. These measures are found in the development plans of all underdeveloped countries.

But there are certain portions in the Malthusian theory which are not applicable to underdeveloped countries. *First*, the Malthusian theory of underconsumption does not have any relevance to such countries. In the Malthusian analysis underconsumption implies an abundance of non-marketable goods due to deficiency of effective demand. In the case of underdeveloped countries, it refers to the low level of consumption due to low level of production.

Second, Malthus maintained that the lack of effective demand was due to parsimony of capitalist. The remedy, he suggested, was "unproductive consumption" on the part of capitalists and unproductive workers. All these are not applicable to conditions prevailing in underdeveloped countries. In an underdeveloped country, income levels are extremely low, propensity to consume is very high and savings are negligible. Here the problem is not of raising effective demand through increased consumption, for it will lead to inflation. Rather, the problem is to raise the levels of employment, income, and saving for development.

Chapter 9

MILL'S THEORY

INTRODUCTION

John Stuart Mill, the eldest son of James Mill, was known to his contemporaries as an infant prodigy. He learnt Greek at the age of three; arithmetic and history at the age of six; Latin at the age of eight; logic at the age of twelve; economics at the age of thirteen; and Benthamite political philosophy at the age of fifteen. He read and learnt all this at home under his father, James Mill, and acquired the habit of going for walks with him and narrating to him what he had read the previous day. Ricardo was a close friend of James Mill at whose instigation he had written his *Principles of Political Economy and Taxation*. So John Mill knew Ricardo personally, visited him and as a child had been taken on walks by the latter. Naturally, he became the defender of Ricardian doctrines against critics. In 1848, Mill published his *Principles of Political Economy with some of their applications to Social Philosophy*¹. This book saw seven editions during Mill's life-time, and was the accepted textbook both in British and American universities for about 50 years when Marshall's *Principles of Economics* (1890) replaced it by 1900.

THE THEORY

Mill regarded economic development as a function of land, labour and capital. While land and labour are the two original factors of production, capital is "a stock, previously accumulated or the products of former labour." Increase in wealth is possible only if land and capital help to increase production faster than the labour force. Wealth consists of tools, machines, and skills of the labour force. It is productive labour that is productive of wealth and of capital accumulation. "The rate of capital accumulation is a function of the proportion of the labour force employed productively. Profits earned by employing unproductive labour are merely transfers of income, unproductive labour does not generate wealth or income". It is the productive labourers who

¹Its 7th edition, 1871, ed. W.J. Ashley was first published in the *Collected Works of John Stuart Mill*, Vols. II and III = M. P. 1902.

productive consumption. Productive consumption is that "which goes to maintain and increase the productive powers of the community." It implies that productive consumption is an input necessary to maintain productive labourers.

Control of Population Growth. Mill believed in the Malthusian theory of population. By population he meant the number only of the working class. He was, therefore, worried about the growth in numbers of productive labourers who worked for hire. He believed that population control was essential for improving the conditions of the working class so that they might enjoy the fruits of technological progress and capital accumulation. He propagated birth control as against moral restraint.

Wages Fund. According to Mill, the elasticity of supply of labour is very high in response to a rise in wages. Wages generally exceed the minimum subsistence level. Wages are paid out of capital. Hence they are limited by the existing fund of capital meant for paying wages. Thus wage per head can be arrived at by dividing the total circulating capital by the working population. Wages can increase by an increase in the aggregate fund of capital employed in hiring labour or by a decrease in the number of workers. If wages rise, supply of labour will be high. Competition among workers will not only bring down wages but also keep some labourers out of employment. This is based on Mill's notion that "demand for commodities is not demand for labour." It means that income invested as advances of wages to labour creates employment and not income spent on consumer goods. An increase in consumption will mean a decline in investment. So increase in investment leads to increase in the wage fund and to economic progress.

Rate of Capital Accumulation. According to Mill, the rate of capital accumulation depends upon: (1) "the amount of the fund from which saving can be made" or "the size of the net produce of industry", and (2) "the strength of the disposition to save". Capital is the result of saving, and savings come from the "abstinence from present consumption for the sake of future goods". Although capital is the result of saving, it is nevertheless consumed. This means that saving is spending. Since savings depend upon the size of the net produce of industry, they increase with the increase in profit and rent which go to make the net produce. On the other hand, the strength of the disposition to save depends upon (1) the rate of profit, and (2) the desire to save or what Mill called "the effective desire of accumulation." For Mill, profits depend on the cost of labour. So the rate of profit is the ratio of profits to wages. When profits rise or wages fall, the rate of profit increases which, in turn, raises the rate of capital accumulation. Similarly, it is the desire to save which tends to increase the rate of capital accumulation.

Rate of Profit. According to Mill, the ultimate tendency in an

economy is for the rate of profit to decline due to diminishing returns in agriculture and increase in population at a Malthusian rate. In the absence of technical improvements in agriculture and the growth rate of population being higher than the rate of capital accumulation, the rate of profit is "within a hand's breadth of the minimum," and the country is "on the verge of the stationary state."

However, the tendency of profits to be minimum can be checked by a number of factors: (1) capital losses during a crisis; (2) technical improvements; (3) the expansion of foreign trade; (4) government borrowing for unproductive expenditure; and lastly, by capital exports to colonies to produce consumer goods for the home country. But none of these factors can continue indefinitely. So ultimately profits would have the tendency to be at the minimum level and the rate of accumulation to decline.

The Stationary State. Mill thought that the stationary state was imminent—"at most a few years ahead and no more"—its arrival being postponed by the above factors. He welcomed its arrival because it would ultimately lead to improvement in income-distribution and a large remuneration for labour. But this could only be possible by control on the increase in numbers among the working classes through "provident habits" and education. Thus "in Mill's stationary state, there could be no increase in either population or stock of capital, profit having reached the minimum necessary to prevent net dissaving by the economy as a whole. However, there might still be a rising standard of living due to improvements in the art of living and increased leisure through technical progress."

Role of the State. Mill was in favour of the policy of laissez-faire which should be the general rule: "every departure from it, unless required by some great good, is a certain evil." He, therefore, assigned the minimum role to the state in economic affairs. For instance, he thought it a "necessary" intervention by the state to reform the redistribution of the ownership of the means of production with such schemes as a ceiling on inheritance, peasant proprietorship, profit sharing, and cooperation. Even as the believer of laissez-faire, Mill favoured reforms in the institutional framework of the market. He wanted the state to pass "laws against commercial frauds" and enforce them strictly. He also recommended compulsory education and a system of examinations by the state because the uneducated cannot be a "competent judge of the commodity." And, "successful production depends more on the qualities of the human agents, than on the circumstances in which they work." Similarly, Mill declared himself in favour of the regulation of working hours on the ground that "public action is sometimes necessary to give effect to self-interests of individuals." Further, Mill was in favour

of free trade and against protection and defended the imposition of protective duties temporarily in the case of infant industries.

A Critical Appraisal

Of all the classical economists, Mill stands unique in that he built a theory in which he discussed almost all the factors which are essential for economic development in the present times. He stressed the importance of such factors as the rate of saving, the profit rate, the rate of capital accumulation, technical improvements, equitable distribution, expansion of foreign trade, institutional changes, etc.

But Mill "was not original as an economist," according to Prof. E. Roll. Prof. Stigler is more forthright when he says, "Mill was not trying to build a new system but only to add improvements here and there to the Ricardian system." He tried to improve upon Ricardo fundamentally in two respects, viz., the stationary state and the wages-fund doctrine. But these have also been subjected to criticisms along with his other notions.

1. Stationary State not a Reality. Ricardo believed that the stationary state would come about in the future when capital accumulation stopped. For Mill, the stationary state was very near. He welcomed its arrival for it would lead to improvement in the distribution of income. But Mill turned out to be a false prophet because the stationary state that he foresaw has not arrived, and nor does it show any signs of arrival.

2. Wrong Notion of Wages Fund. Unlike Ricardo, Mill believed that the wages fund depended upon the aggregate fund of capital and that wages were paid out of capital as advances. He, therefore, argued that trade unions could raise wages. Economists have vehemently criticised Mill's wages-fund theory. Cannon called it "the biggest blunder made in economic theory in modern times." Marshall called it the "vulgar form of the wages-fund theory" on which Mill "expresses his meaning badly." The reason being that he related the wages fund to capital rather than to the national dividend.

3. Malthusian Theory is Wrong. Mill was unduly pessimistic about the growth of population in terms of the Malthusian theory. The Malthusian theory has been proved wrong in the capitalist countries of the world.

4. Law of Diminishing Returns not Operative. Similarly, Mill's belief in the operation of the law of diminishing returns on land has also been proved wrong by the technological progress that has taken place in the advanced countries.

5. Laissez-faire not a Practical Policy. Mill favoured the policy of laissez-faire in economic affairs. But such a policy is impractical. In fact,

no economy can function in which there is perfect competition, and no economy can grow without state help in one form or the other.

Applicability of Mill's Theory to Underdeveloped Countries

Mill's views about capital accumulation, diminishing returns, population growth and the limited role of the state are applicable to underdeveloped countries.

The rate of capital accumulation can be increased by increasing the net produce of industry and by strengthening the disposition to save. The latter, in turn, depends upon the rate of profit and the desire to save. These are highly practical solutions for increasing the rate of capital accumulation in underdeveloped countries.

Land is limited in underdeveloped countries and there is the absence of technical improvements on land. Consequently, the law of diminishing returns operates with full force and the productivity of land is low. Mill not only pointed towards the operation of the law of diminishing returns but also advocated technological improvements on land for increasing its productivity which have been accepted as cardinal principles for economic development in such countries.

Mill believed in the Malthusian theory of population but with the difference that he favoured population control through birth control and not by moral restraint alone. The experience of underdeveloped countries proves that the Malthusian theory is applicable and that population can be controlled only by adopting birth control, as recommended by Mill.

Mill was a staunch free trader and believed in the policy of *laissez-faire*. Naturally, he assigned minimum role to the state. But whatever state intervention Mill wanted that is applicable in full to underdeveloped countries. He recommended reforms in the redistribution of the ownership of the means of production through such measures as ceiling on inheritance, peasant proprietorship, profit sharing and cooperation. These are very relevant in the context of underdeveloped countries because there are inequalities of income and wealth. Similarly, Mill suggested reforms in the institutional framework of the market. Since underdeveloped countries are characterised by market imperfections, reforms in the institutional set-up are essential. Last but not the least, his emphasis on compulsory education and reduction of working hours of labourers is as true as it was when he wrote his *Principles* in 1848. As a matter of fact, no development is possible in underdeveloped countries without assigning some role to the state.

Chapter 10

THE CLASSICAL THEORY

The classical theory¹ can be briefly explained as follows:

Laissez-Faire Policy. The classical economists believe in the existence of an automatic free market perfectly competitive economy which is free from any government interference. It is the "invisible hand" which maximises the national income.

Capital Accumulation, the Key to Progress. All classicists regard capital accumulation as the key to economic progress. They, therefore, lay emphasis on larger savings. Only capitalists and landlords are capable of saving, according to them. The working class is incapable of saving because it gets wages equal to the subsistence level.

Profits, the Incentive to Investment. According to the classicists, profits induce investment. The larger the profits, the greater the capital accumulation and investment.

Tendency of Profits to Decline. Profits do not increase continuously. They tend to decline when competition increases for larger capital accumulation among capitalists. The reason, according to Smith, is increase in wages due to competition among capitalists. Whereas, according to Ricardo, when wages and rent rise with the increase in the price of corn, profits decline.

Stationary State. All classical economists visualize the stationary state as the end of the process of capital accumulation. When once profits start declining, this process continues till profits become zero, population and capital accumulation stop increasing and the wage rate reaches the subsistence level. According to Smith, it is the scarcity of natural resources that finally stops growth and leads the economy to the stationary state.

Malthus establishes a unique co-relation between population growth and food supply. According to him, if the growth of population were left uncontrolled, it would outrun the growth of capital and hence the means of subsistence. Both Ricardo and Malthus see a growing population and a declining growth of capital through the operation of the law of diminishing returns, as ultimate checks to economic development. The same view is expressed by Mill who points out that in the absence of

¹For a detailed analysis study the Smithian and Ricardian theories along with those of Malthus and Mill.

technical improvements in agriculture, and the growth rate of population being higher than the rate of capital accumulation, the rate of profit starts declining and the economy ultimately reaches the stationary state. But he welcomes the stationary state because it would lead to improvement in income distribution and a large remuneration for labour. However, this is only possible by controlling the increase in numbers among the working population.

In broad outline, the classical theory of economic development may be stated thus: Suppose an expected increase in profits brings about an increase in investment which adds to the existing stock of capital and to the steady flow of improved techniques. This increase in capital accumulation raises the wages fund. As a result wages rise. Higher wages induce an accelerated population growth which causes the demand for food to rise. Food production is raised by employing additional labour and capital. But diminishing returns to land bring about a rise in labour cost. Consequently, the price of corn goes up and in turn rents increase, wages rise, thereby reducing profits. Reduction in profits implies reduction in investment, retarded technological progress, diminution of wages fund and slowing down of population growth and capital accumulation. "In the classical model, the end result of capitalist development is stagnation This stagnation resulted from the natural tendency of profits to fall and the consequent choking off of capital accumulation."² When this happens, capital accumulation ceases, population becomes constant and the stationary state sets in.³

A Critical Appraisal

This simple and abstract classical theory of development is not free from criticisms.

1. Ignores Middle Class. The whole classical analysis was based on the socio-economic environment prevailing in Great Britain and certain parts of Europe. It assumed the existence of a rigid division of society between capitalist (including landlords) and labourers. It neglected the role of the middle class which provided the necessary impetus to economic growth. It did not occur to them that the major source of savings in an advanced society was the income-receivers and not the property owners.

2. Neglects Public Sector. To the classicists, perfect competition and the institution of private property were the essential prerequisites for economic development. They, however, failed to realize the important role which the public sector has assumed in accelerating capital accumulation in recent years.

² B. Higgins, op. cit., pp. 87-94.

³ For diagrammatic explanation give Fig. 61 here.

3. Less Importance to Technology. One of the important lacunae in the classical theory is the part played by science and technology in development. The classicists usually assumed technical knowledge to be given and unchanging overtime. But they failed to visualize the important impact that science and technology had on the rapid economic development of the now developed nations.

4. Unrealistic Laws. The pessimistic view of the classical economists like Ricardo and Malthus that "the end result of capitalist development is stagnation" was based on two assumptions: application of diminishing returns to land and the Malthusian theory of population. Rapid increase of farm produce in the advanced nations has proved that the classicists underestimated the potentialities of technological progress in counteracting diminishing returns to land. Similarly, the Malthusian theory of population has been disproved by population trends prevailing in the Western World. Diametrically opposed to the Malthusian principle, population has not grown so fast as to outstrip the food supply. On the other hand, agricultural productivity has been much faster than the population growth.

5. Wrong Notions about Wages and Profits. Wages have not tended to be at the subsistence level. There has been a continuous increase in money wages without a corresponding decline in profit rates. And the mature economies have not reached the stage of economic stagnation. Both Ricardo and Malthus have been scoffed at as false prophets in the light of the economic development of the Western World.

6. Unrealistic Growth Process. The classical theory assumed a stationary state in which there was change, but around a point of equilibrium; there was progress, but steady and continuous like a tree. This is, however, not a satisfactory explanation of the process of economic growth. For economic growth, as it is understood today, does not proceed steadily and continuously, but by "fits and starts."⁴

⁴For its Applicability to Underdeveloped Countries refer to the Smithian and Ricardian theories along with those of Malthus and Mill under this head.

Chapter 11

THE MARXIAN THEORY

INTRODUCTION

Karl Marx, the celebrated author of '*Das Kapital*', is one of the few celebrities in history who cast a spell on hundreds of millions of people by their doctrines. He has been epitomized as 'Marx the Prophet' and is ranked with Christ and Mohammad if we are to judge him by the number of his followers. As Schumpeter wrote, "Marxism is a religion. To the orthodox Marxist, as any believer in a Faith, the opponent is not merely in error but in sin."¹ Marx predicted the inevitable doom of capitalism and it was on this prediction that communism has built its edifice. The Marxian analysis is the gravest and the most penetrating examination of the process of capitalist development. It had the greatest influence in shaping policies in the Soviet Union, China, and other communist countries. Our purpose here is to examine the Marxian process of economic development and not the Marxist system as whole.

THE MARXIAN THEORY

"Marx contributed to the theory of economic development in three respects, namely, in broad respect of providing an economic interpretation of history, in the narrower respect of specifying the motivating forces of capitalist development, and in the final respect of suggesting an alternative path of planned economic development."

Materialistic Interpretation of History. The materialistic interpretation of history attempts to show that all historical events are the result of a continuous economic struggle between different classes and groups in society. The main cause of this struggle is the conflict between 'the mode of production' and 'the relations of production.' The mode of production refers to a particular arrangement of production in a society that determines the entire social, political and religious way of living. The relations of production relate to the class structure of a society "uniquely characterised" by the following components: (i) the organisation of labour in a scheme of division and co-operation, the skills of labour, and the status of labour in the social context with respect to

¹J.A. Schumpeter, *Ten Great Economists*, p. 5 and footnote

degrees of freedom or servitude; (ii) the geographical environment and the knowledge of the use of resources and materials; and (iii) technical means and processes and state of science generally.²

According to Marx, every society's class structure consists of the *propertied* and the *non-propertied* classes. Since the mode of production is subject to change, a stage comes in the evolution of a society when the forces of production come into clash with the society's class structure. The existing property relations "turn into fetters" on the forces of production. Then comes the period of 'social revolution.' This leads to the class struggle—the struggle between the haves and the have-nots—which ultimately overthrows the whole social system.

Surplus Value. Marx uses his theory of surplus value as the economic basis of the 'class struggle' under capitalism and it is on the basis of his theory of surplus value that he builds the superstructure of his analysis of economic development. Class struggle is simply the outcome of accumulation of surplus value in the hands of a few capitalists. Capitalism, according to Marx, is divided into two great protagonists: the workers who sell their 'labour-power' and the capitalists who own 'the means of production.' Labour power is like any other commodity. The labourer sells his labour for what it is worth in the labour market, *viz.*, for its value. And its value, like the value of any other commodity, is the amount of labour that it takes to produce labour-power. In other words, the value of labour-power is the value of the means of subsistence necessary for the maintenance of the labourer, which is determined by the number of hours necessary for its production. According to Marx, the value of the commodities necessary for the subsistence of the labour is never equal to the value of the produce of that labour. If a labourer works for a ten-hour day, but it takes him six hours' labour to produce goods to cover his subsistence, he will be paid wages equal to six hours' labour. The difference worth 4 hours' labour goes into the capitalist's pocket in the form of net profits, rent and interest. Marx calls this unpaid work "surplus value." The extra labour that a labourer puts in and for which he receives nothing, Marx calls "surplus labour."

Capital Accumulation. According to Marx, it is surplus labour that leads to capital accumulation. This supererogatory labour simply augments the capitalist's profits. The capitalist's main motive is to increase the surplus value which goes to swell his profits. He tries to maximize his profits in three ways: (1) by prolonging the working day in order to increase the working hours of surplus labour. If the working hours are extended from ten to twelve, the surplus will automatically

²M.M. Bober, *Karl Marx's Interpretation of History*, p. 24.

increase from four to six; (2) by diminishing the number of hours required to produce the labourer's sustenance. If they were reduced from six to four, the surplus would again rise from four to six. It also tantamounts to a reduction in the subsistence wage; (3) by 'the speeding up of labour', i.e., increasing the productivity of labour. This requires a technological change that helps in raising the total output and lowering the cost of production.

Of the three methods, according to Marx, increase in the productivity of labour is the likely choice of the capitalists, since the other two methods, of extending the working hours and reduction of wages, have limitations of their own. So in order to make improvements in the productivity of labour, the capitalists save the surplus value, reinvest it in acquiring a large stock of capital and thus accumulate capital. "Accumulate, accumulate! That is Moses and the Prophets," and "Save, save, i.e., reconvert the greatest possible portion of surplus value or surplus product into capital." These are the capitalist's methods.

Profits are determined by the amount of capital. As Marx says, "Capital is dead labour that vampire like only lives by sucking living labour and lives the more, the more labour it sucks." To explain the origin of profit and to analyse the relation between wages and profits, Marx separates capital into constant capital and variable capital. Capital invested in stocks or raw materials or equipment which directly assists the productivity of labour, Marx calls *constant capital* (c). Capital devoted to the purchase of labour power in the form of wages or direct subsistence, he terms *variable capital* (v). The surplus value is denoted by s. So the total value of product (w) = constant capital (c) + variable capital (v) + surplus value (s) or (c + v) + s

It is on the basis of this division of the total output that Marx introduces his *Departmental Schema of Simple and Expanded Reproduction*.

Marx divides the total output of the economy (w) into Department I and Department 2. The former is related to the production of capital goods and the latter to the consumer goods. The total output of each Department is shown as

$$\begin{aligned} w_1 &= c_1 + v_1 + s_1 \\ + w_2 &= c_2 + v_2 + s_2 \\ \hline w &= c + v + s \end{aligned}$$

The Simple Reproduction Scheme indicates a situation of stationary state in which all that is produced is consumed. Thus net investment is zero and there is no accumulation or surplus. Therefore, equ

$$r = \frac{s}{c+v} = \frac{s/v}{c/v+1}$$

The rate of profit (r) varies inversely with the organic composition of capital (c/v) and directly with the rate of surplus values (rate of exploitation) (s/v). Therefore, the rate of profit ' r ' rises with the rate of surplus value s/v and falls with the organic composition of capital c/v .

Capitalist Crisis. In order to counteract this tendency of declining rate of profit, the capitalists increase the degree of exploitation by reducing wages, lengthening the working day, and by "speed ups," etc. But since every capitalist is engaged in introducing new labour-saving and cost-reducing devices, the ratio of labour (and hence surplus value) to total output falls still further. The rate of profit declines all the more. Production is no longer profitable. Consumption dwindles as machines displace men and the industrial reserve army expands. Bankruptcies ensue. Every capitalist tries to dump goods in the market and in the process small firms disappear. A capitalist crisis has begun. The ultimate cause of all economic crisis, Marx points out, is the poverty and limited purchasing power of the masses. Economic crisis appears in the form of an over-production of commodities, acute difficulties in finding markets, a fall in prices and a sharp curtailment of production. During the crisis, unemployment increases sharply, the wages of workers are further cut, credit facilities break down and small employers are ruined.

This does not continue for ever. Revival soon starts. The low level of prices, cut in wages, elimination of speculative ventures and destruction of capital tend to raise the profit rate which eventually leads to new investments. As Marx wrote, "A crisis always forms the starting point of large new investments. Therefore, from the point of view of society as a whole, a crisis is, more or less, a new material basis for the next turnover cycle." But it leads to the same catastrophic conclusion: competition for labour; higher wages; labour-saving machinery; a reduction in surplus value; decline in profit rate; still greater competition and collapse. This succession from crisis to depression, followed by recovery and boom and then again crisis, is evidence of the cycle character of the development of capitalist production.

In each period of crisis stronger capitalists expropriate the weaker capitalists and along with it grows the indignation of the working class, "a class always increasing in numbers, and disciplined, united, organised by the very mechanism of the process of capitalist production itself. The monopoly of capital becomes a fetter upon the mode of production Centralization of the means of production and socialization of labour at last reach a point where they become incompatible with their

capitalists integument. This integument is burst asunder. The knell of capitalist's private property sounds. The expropriators are expropriated." This is the historical tendency of capitalist accumulation. In elaborating the general law of capitalist accumulation, Marx provides the economic explanation of the necessity and inevitability of the revolutionary transformation from capitalist to socialist society. Capitalism leads to the proletarian revolution whereby the "dictatorship of the proletariat" is established. The State "withering away" "the State to his 'withering away'". The State "withering away" is the final stage of capitalism.

A Critical Appraisal

Marx's theory of capitalist development has been accepted by his followers as a gospel truth while it has been severely criticised by his opponents for the following reasons:

1. Surplus Value Unrealistic. The whole Marxian analysis is built on the theory of surplus value. However, in the real world, we are concerned not with values but with real tangible prices. Thus Marx has created an abstract and unreal *value world* which has made it difficult and cumbersome to understand the working of capitalism.

2. Marx—A False Prophet. Marx has proved to be a false prophet. No doubt socialist societies have come into existence but their evolution has not been on the lines laid down by Marx. The countries which have toed the Marxian line of thinking have been curiously those in which capitalist development lagged behind. All the communist states had been poor and are even now so, as compared to the capitalist countries. There is no increasing misery of labour in advanced capitalist societies as asserted by Marx. On the contrary, real wages of workers have continued to rise. The workers have tended to become more prosperous with capitalist development. And the middle class instead of disappearing has emerged as a dominant class. There have been also no signs of the 'withering away' of the State in these countries.

3. Technological Progress Helpful in Increasing Employment. Marx pointed out that with increasing technological progress, the industrial reserve army expands. But this is an exaggerated view, for the long run effect of technological progress is to create more employment opportunities by raising aggregate demand and income.

4. Falling Tendency of Profits not Correct. According to Joan Robinson, Marx's "explanation of the falling tendency of profits explains nothing at all." Marx contends that as development proceeds, there is an increase in the organic composition of capital which brings about a decline in the profit rate. But Marx failed to vis-

technological innovations can be capital-saving too, and that with a fall in capital-output ratios and increases in productivity and total output, profits can rise along with wages.

5. Marx could not Understand Flexibility in Capitalism. Marx also could not foresee the emergence of political democracy as the protector and the preserver of capitalism. Democracy as a political system has proved its resilience and adaptability to the changing times. The introduction of social security measures, anti-trust laws and the mixed economies have given a lie to the Marxian prediction that capitalism contains within itself the seeds of its own destruction.

6. Cyclical Theory Wrong. Marx emphasized that capital accumulation led to a reduction in the demand for consumption goods and fall in profits. But he failed to realise that with economic development the share of wages in aggregate income need not fall, nor the demand for consumer goods.

7. Static Analysis. Marx's theory, though it sought to explain a dynamic process, was, in the words of Schumpeter, "unsuited for it, its two main props being (a) labour theory of value, and (b) a modified version of subsistence theory of wages. Marx was analysing the problem of growth with the help of tools which were essentially suited to static economic analysis."

Conclusion. Despite these weaknesses, some of the Marxian tools pertaining to his theory of economic development have ever since become part and parcel of the theory of economic growth. Technological progress and innovations are the main stay of any theory of economic development. Similarly, capital accumulation is the fundamental idea behind economic growth. Profits are still regarded as both the hallmark of capitalist development and its Achilles' heel. Marx showed that economic development does not follow a smooth course but comes about in "fits and starts." Business cycles are inevitable. He pointed out that a state of under-consumption was the main cause of depression and that for stable growth a proper balance between investment and consumption was essential. He also indicated that too low or too high wages in relation to total output can adversely affect investment and thus stifle economic growth. Industrial unemployment is also one of the major variables in his system. Thus, Marx was in a way Keynes' precursor.

The Marxian Theory and Underdeveloped Countries

The Marxian theory is not applicable directly to underdeveloped countries. Marx did not think of the problems of such countries. "Apart from a few illusions remarkable for their determinant note with regard to obtaining prospects for economic development in regions like

Western Asia or India no special attention is given to the problems of change in underdeveloped countries".⁴ Marx was mainly concerned with problems connected with the development of capitalism in the Western World. Colonies were regarded as one of the "highest stages" in capitalist development. Foreign domination was regarded as the principal cause of economic backwardness of the colonies. The only obvious remedy was their political freedom.

Marx's failure to recognize the existence of population pressures makes his theory inapplicable to overpopulated underdeveloped countries. But some of the variables of his analysis do exist in such economies. In underdeveloped countries till recently under the colonial rule, labour was being exploited for the benefit of the 'home country'. There was the concentration of capital in the hands of a few capitalists. Even now in almost all the underdeveloped countries that are also politically free, wages are near subsistence levels, the 'increasing misery' of the masses is visible, a 'reserve army' of the chronic and disguised unemployed exists; the problem of under-consumption is universal and the society is sharply divided between the 'two classes,' the middle class being virtually non-existent.⁵ The existence of such conditions can lead to 'class struggle' and the establishment of the 'dictatorship of the proletariat.' The recent political turmoils in some of the Latin American, African, the Middle and the Far Eastern countries have shown that the existence of Marxian 'conditions' in backward countries act like nurseries where the communist seed grows soon. Ironically, however, it is Marx's perception of planned development expressed in his minor writings which presumably has had a greater impact on the actual economic development of countries such as Soviet Russia and mainland China. Marx's notion of planned development also seems to appeal to those backward countries which are in a great hurry to industrialize at the risk of excessive national "belt-tightening".

As a matter of fact, it is Marx's Departmental Schema that is applicable to underdeveloped countries. Such a country is primarily a dualistic economy consisting of a capitalist sector and a subsistence agriculture and small scale sector which may be said to represent Marx's two Departments. It is the capitalist sector which yields large economic

⁴A Bonne, op. cit. p. 243.

⁵Only the Marxian terminology is applicable. For under-consumption implies an abundance of unmarketable goods due to over-production in the Marxian analysis while in the case of underdeveloped countries it refers to low level of consumption due to low level of production. Similarly the existence of a surplus reserve army of workers in the Marxian theory is the result of the introduction of labour saving devices, whereas in underdeveloped countries unemployment is disguised and rural, not industrial—the result of numbers rather than the use of industrial technology.

surplus, while the subsistence sector yields a small surplus. Rapid economic development is possible by reorganising and expanding the capitalist sector (Department 1) and transforming the subsistence sector (Department 2) into the former so as to increase the economic surplus. This necessitates planning for industrialisation and increase in the supply of agricultural commodities to meet the expanding demand of the capitalist sector. As pointed out by Oscar Lange, it is the commodity character of agricultural production which determines the course and rate of industrialisation, along with the increased production of capital goods.⁶

A number of underdeveloped countries like India, the Egypt, Burma and Ghana have followed the Marxian Departmental Schema in their development plans.⁷ These plans have emphasised the growth of Department 1 in relation to Department 2. The basic strategy has been to increase investments in capital goods industries and services, and to increase the supply of consumer goods by increasing investment and production in agriculture and small scale sector. The primary aim has been to create larger employment opportunities, to increase purchasing power and fresh demand, to build a strong capital base and increase productive and technical capacities within the economy.

⁶O. Lange (ed.), *Problems of Political Economy of Socialism*, 1962.

⁷The Mahalanobis Model for the Second Indian Five-Year Plan is based on the Marxian Departmental Schema.

Chapter 12

THE SCHUMPETERIAN THEORY

INTRODUCTION

Joseph Alois Schumpeter first presented his theory of economic growth in the *Theory of Economic Development* published in German in 1911 (its English edition appeared in 1934) which was elaborated and refined but in no way altered in any essential respect in his *Business Cycles* (1939) and *Capitalism, Socialism and Democracy* (1942).

THE THEORY

To start with, Schumpeter assumes a perfectly competitive economy which is in stationary equilibrium. In such a stationary state, there is perfect competitive equilibrium: no profits, no interest rates, no savings, no investments and no involuntary unemployment. This equilibrium is characterised by what Schumpeter terms the "circular flow" which continues to repeat itself in the same manner year after year, similar to the circulation of the blood in an animal organism. In the circular flow, the same products are produced every year in the same manner. "For every supply there awaits somewhere in the economic system a corresponding demand. For every demand the corresponding supply." In other words, all economic activities are repetitive in a time-less economy. To Schumpeter, "The circular flow is a stream that is fed from the continually flowing springs of labour-power and land, and flows in every economic period into the reservoir which we call income, in order to be transformed into the satisfaction of wants." Development, according to him, "is spontaneous and discontinuous change in the channels of the circular flow, disturbance of equilibrium, which for ever alters and displaces the equilibrium state previously existing."¹ These 'spontaneous and discontinuous' changes in economic life are not forced upon it from without but arise by its own initiative from within the economy and appear in the sphere of industrial and commercial life. Development consists in the carrying out of new combinations for which possibilities exist in the stationary state. New combinations come about in the form of innovations.

¹A. Schumpeter, *Theory of Economic Development*, p. 64 Italics mine.

Innovations. An innovation may consist of: (1) the introduction of a new product; (2) the introduction of a new method of production; (3) the opening up of a new market; (4) the conquest of a new source of supply of raw materials or semi-manufactured goods; and (5) the carrying out of the new organisation of any industry like the creation of a monopoly. According to Schumpeter, it is the introduction of a new product and the continual improvements in the existing ones that leads to development.

Role of Innovator. Schumpeter assigns the role of an innovator not to the capitalist but to the entrepreneur. The *entrepreneur* is not a man of ordinary managerial ability, but one who introduces something entirely new. He does not provide funds but directs their use. The entrepreneur is motivated by: (a) the desire to found a private commercial kingdom. (b) the will to conquer and prove his superiority, and (c) the joy of creating, of getting things done, or simply of exercising one's energy and ingenuity. His nature and activities depend on his social-cultural environment. To perform his economic function, the entrepreneur requires two things: first, the existence of technical knowledge in order to produce new products; second, the power of disposal over the factors of production in the form of credit. According to Schumpeter, a reservoir of untapped technical knowledge exists which he can make use of. Therefore, credit is essential for development to start.

Role of Profits. An entrepreneur innovates to earn profits. Profits are conceived "as a surplus over costs: a difference between the total receipts and outlay—as a function of innovation." According to Schumpeter, under competitive equilibrium the price of each product just equals its cost of production, and there are no profits. Profits arise due to dynamic changes resulting from an innovation. They continue to exist till the innovation becomes general.

Breaking the Circular Flow. Schumpeter's model starts with the breaking up of the circular flow with an innovation in the form of a new product by an entrepreneur for the purpose of earning profits. In order to break the circular flow, the innovating entrepreneurs are financed by *bank-credit* expansion. Since investment in innovations is risky, they must pay interest on it. Once the new innovation becomes successful and profitable, other entrepreneurs follow it in "swarm-like clusters." Innovations in one field may induce other innovations in related fields. The emergence of a motor car industry may, in turn, stimulate a wave of new investments in the construction of highways, rubber tyres and petroleum products, etc. But the spread of an innovation is never cent per cent.

The spread of innovation is shown in Fig. 12.1 where the percentage of firms adopting a particular innovation is shown on the vertical axis and time taken on the horizontal axis. The curve OI shows that firms adopt an innovation slowly to start with but soon the adoption of innovation gains momentum. But it never reaches 100 per cent adoption by firms.

Cyclical Process. Since investment is assumed to be financed by creation of bank-credit, it increases money incomes and prices and helps to create a cumulative expansion throughout the economy. With the increase in the purchasing power of the consumers, the demand for the products of the old industries increases in relation to supply. Prices rise, profits increase and old industries expand by borrowing from the banks. It induces a secondary wave of credit inflation which is superimposed on the primary wave of innovation. Over-optimism and speculation add further to the boom. After a period of gestation the new products start appearing in the market displacing the old products and enforcing a process of liquidation, re-adjustment and absorption.² The demand for the old products is decreased. Their prices fall. The old firms contract output and some are even forced to run into liquidation. As the innovators start repaying bank loans out of profits, the quantity of money is decreased and prices tend to fall. Profits decline. Uncertainty and risks increase, the impulse for innovation is reduced and eventually comes to an end. Depression ensues.

Schumpeter believes in the existence of the Kondratieff long-wave of upswings and downswings in economic activity. Each long-wave upswing is brought about by an innovation in the form of a new product which leads to further innovations in the methods of production, new forms of business organisation, new sources of supply of raw materials and intermediate products, and new markets. Thus there is abundance of goods available for the masses." In the words of Schumpeter, "mass production means production for the masses." Once the upswing ends, the long-wave downswing begins and the painful process of readjustment to the "point of previous neighbourhood of equilibrium" starts. Ultimately the natural forces of recovery bring about a revival

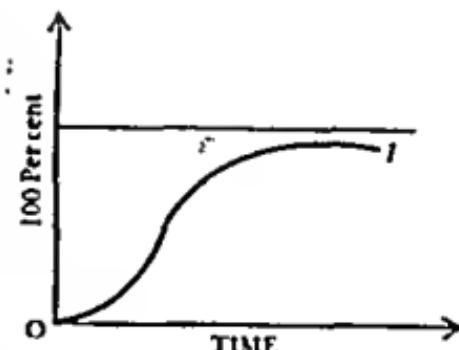


FIG. 12.1

²J. A. Schumpeter, 'The Analysis of Economic Change' in *Readings in Business Cycle Theories*, pp. 89

Once again equilibrium is restored. Then some enterprising entrepreneurs begin with a new set of innovations, others follow, and a new boom begins. Schumpeter describes this process of capitalist development as one of "creative destruction," wherein the old economic structures of society are being continually destroyed and the new structures are being continually created in their place.

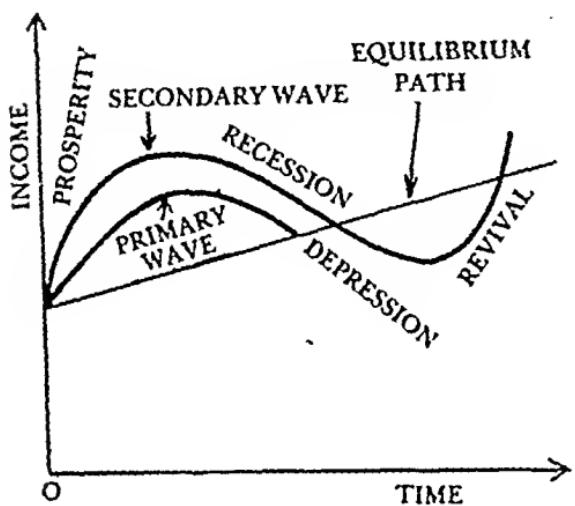


FIG. 12.2

Schumpeter's cyclical process of economic development is illustrated in Fig. 12.2 where the secondary wave is superimposed on the primary wave of innovation. With over-optimism and speculation, development proceeds more rapidly in the prosperity phase. When recession starts, the cycle continues downward below the equilibrium level to the depression phase. Ultimately, another innovation brings about revival.

In fine, entrepreneurs are the key figures in the Schumpeterian analysis. They bring about economic development in spontaneous and discontinuous manner. And "cyclical swings are the cost of economic development under capitalism," a permanent feature of its dynamic time-path.

Secularly, continued technological progress will result in an unbounded increase in total and per capita output, since historically there are no diminishing returns to technological progress. As long as technological progress takes place, the rate of the profit will be positive. Hence there can be no drying up of sources of investible funds nor any vanishing of investment opportunities. "There is therefore no a priori ceiling to the level of per capita income in a capitalist society. Nonetheless, the economic success of capitalism will eventually lead to its decay. For the very process of capitalist development weakens the institutions and values basic to its own survival."³ "Can capitalism survive? No, I do not think it can," wrote Schumpeter, as his final appraisal of the future of capitalism. To him, the very success of capitalism "undermines the

³I. Adelman, *Theories of Economic Growth and Development*, p. 108.

social institutions which protect it, and "inevitably" creates conditions in which it will not be able to live and which strongly point to socialism as the heir-apparent."⁴

Process of the End of Capitalism. According to Schumpeter, capitalism can maintain itself only so long as entrepreneurs behave like knights and pioneers. But such daring innovators are being destroyed by the capitalist system itself which rests on a rational attitude. This enquiring, sceptical and rational attitude permeates the entire capitalist society. As a result, three forces are discernible, that are the beginning of the creeping death of capitalism. They are: (1) the decadence of the entrepreneurial function; (2) the disintegration of the bourgeois family; and (3) the destruction of the institutional framework of the capitalist society.

In the early stages of capitalism, the driving force came from entrepreneurs who dared to innovate, to experiment, and to expand. But now innovation is reduced to a routine. Technological progress has become the business of teams of trained specialists. The new 'lords' of business are the managers, depersonalized owners and private bureaucrats. This reduces the industrial bourgeoisie to a class of wage-earners and thus undermines the function and the position of the entrepreneur as the "warrior knight."

There is also the destruction of the bourgeoisie family. Parents adopt a rationalistic attitude in their behaviour towards children. The traditional family idea is weakened. The desire to found a "private kingdom", a "dynasty" is no longer there. The will to accumulate wealth gradually disappears and along with it another important aspect of the capitalist society.

Finally, Schumpeter contends that the entrepreneur also tends to destroy the institutional framework of the capitalist society. The tendency towards concentration into big concerns weakens and destroys the twin institutions of private property and freedom of contract. In the case of big concerns, the proprietors are the small and large shareholders who are "dematerialized" and "defunctionalized" by the professional, salaried managers. The proprietors' role is performed by the latter while the former are totally divorced from active management. According to Schumpeter, it was rationality that had destroyed the royal power in the past. Now again, it is the rationalistic attitude of the ruling group towards domestic and international problems that will be the bane of capitalism. But all these forces are not enough to ring the death knell of capitalism. It is, however, the active hostility of the intellectuals which is bringing the 'day' nearer. The intellectuals sow seeds of doubt

⁴J.A. Schumpeter, *Capitalism, Socialism, and Democracy*, p. 61

and discontentment in the minds of the masses against the social and political framework of the capitalist order. By inciting the white-collar groups and the labouring classes they are able to secure anti-capitalist political reforms. As a result, the institutional framework, upon which capitalism rests starts crumbling and there is a gradual movement towards socialism. Eventually capitalism would fade away without any bang or whimper.

Criticism of the Theory

"Schumpeter's theory must be ranked as a major performance, one worthy of such great economists as Smith, Mill, Marx, Marshall and Keynes."⁵ No doubt 'it is replete with brilliant reasoning and insight of a great theorist,' yet it is not free from criticisms.

1. The entire process of Schumpeter's theory is based on the innovator whom he regards as an ideal person. Such persons were to be found in the 18th and 19th centuries. At that time innovations were made by entrepreneurs or inventors. But now all innovations form part of the functions of a joint stock company. Innovations are regarded as the routine of industrial concerns and do not require an innovator as such.

2. According to Schumpeter, economic development is the result of the cyclical process. The downswings and the upswings are not essential for economic development. As Nurkse has pointed out, economic development is related to continuous changes.

3. Schumpeter's contention that cyclical changes are due to innovations is also not correct. As a matter of fact, cyclical fluctuations may be due to psychological, natural, and financial causes.

4. Again, Schumpeter regards innovations as the main cause of economic development. But this is far from reality because economic development not only depends on innovations but also on many economic and social changes.

5. Schumpeter gives too much importance to bank-credit in his theory. Bank credit may be important in the short run when industrial concerns get credit facilities from the banks. But in the long run when the need for capital funds is much greater, bank credit is insufficient. For this, business houses have to float fresh shares and debentures in the capital market.

6. Schumpeter's analysis of the process of transition from capitalism to socialism is not correct. He does not analyse how a capitalist society is transformed into socialism. He simply tells that the institutional framework of a capitalist society is transformed with changes in the

⁵G.M. Meier and E. Baldwin, *op. cit.*, p. 95.

functions of the entrepreneur. His analysis of the end of capitalism is emotional rather than real.

To conclude with Meier and Baldwin, "Schumpeter's broad socio-economic analysis of capitalist process is generally admired. Yet few seem prepared to accept its conclusions. His arguments are stimulating but not completely convincing.... Although Schumpeter's analysis is provocative, it seems one-sided and over-emphasized."⁶

Schumpeter's Analysis and Underdeveloped Countries

The applicability of Schumpeter's theory to underdeveloped countries is limited for the following reasons:

1. **Different Socio-Economic Order.** Schumpeter's theory corresponds to a particular socio-economic order that existed in Western Europe and America of the 18th and 19th centuries. In that period some of the prerequisites of growth already existed. In underdeveloped countries the socio-economic conditions are altogether different and the prerequisites for development in the form of economic and social overheads are non-existent

2. **Lack of Entrepreneurship.** The Schumpeterian analysis depends upon the existence of an entrepreneurial class. However, in underdeveloped countries adequate entrepreneurship is lacking. In such economies there are low profit expectations and low state of technologies which do not encourage innovational investments in new plant and equipment. Moreover, the lack of adequate power, transport, skilled personnel, etc. act as disincentives to entrepreneurial activity.

3. **Not Applicable to Socialist Countries.** Schumpeter's analysis is not applicable to the majority of underdeveloped countries which have socialist leanings. For example, the introduction of social security measures and high progressive income taxes are inimical to the development of an entrepreneurial class because they tend to reduce profits.

4. **Not Applicable to Mixed Economies.** Moreover, Schumpeter's innovator is a private entrepreneur who does not fit in the present day mixed economies. In an underdeveloped country, government is the biggest entrepreneur. The main impetus for development comes from the public and the semi-public sectors. Thus, Schumpeter's innovator has a limited role to play in an underdeveloped country.

5. **Institutional Changes and not Innovations Needed.** To start the development process and to make it self-sustaining it is not innovation alone but a combination of several factors like organizational structures, business practices, skilled labour and appropriate values, attitudes and motivations which are required.

⁶Ibid., pp. 99 and 101

6. Assimilation of Innovations. According to Henry Wallich, the development process in underdeveloped countries is based, not on innovation, but on the assimilation of existing innovations. For, entrepreneurs in underdeveloped countries are not in a position to innovate. Rather, they adopt innovations taking place in advanced countries.

7. Neglects Consumption. The Schumpeterian process is 'production-oriented' while the development process is 'consumption-oriented'. This appraisal is applied in the current trend towards the welfare state in which demand and consumption play a leading role.⁷

8. Neglects Savings. Schumpeter's exclusive emphasis on bank credit obscures the role of real savings in investment. It also undermines the importance of deficit financing, budgetary savings, public credit and other fiscal measures in economic development.

9. Neglects External Effects. According to Schumpeter, development is the result of changes that arise from within the economy. But in underdeveloped countries, changes do not take place from within the economy rather they are the outcome of imported ideas, technology and capital. Backward technology, low saving potential and outmoded social, economic and political institutions are incapable of leading to development from "within" in underdeveloped economies.

10. Neglects Population Growth. Further, Schumpeter failed to take into account the impact of the growth of population on the economic development of a country. High growth rate of population tends to lower the growth rate of a developing economy.

11. Unsatisfactory Explanation of Inflationary Forces. In Schumpeter's system inflationary impulses form an integral part of the process of development, but it involves no secular inflation. The long-term price level remains stable. However, in an underdeveloped economy the inflationary forces are very powerful. 'Social demand, working through political and labour union channels seeks to extract from the economy more than what, through domestic production and international trade, it can be made to yield. It is not only development and the associated investment that are responsible for inflationary tendencies, but the entire social climate of a demand-oriented economy.'⁸

Conclusion. All the same, Schumpeter's theory underlines the importance of inflationary financing and innovations as the main factors in economic development. Inflationary financing is one of the potent methods which every underdeveloped country tries to use at one time or

⁷Henry C. Wallich, Some Notes Towards a Theory of Derived Demand in Aggrawal and Singh (ed) *op. cit.*, pp. 193-202

⁸Ibid., pp. 203-204.

another. His analysis is relevant to underdeveloped countries from the standpoint of long range increase in productivity and absorption of surplus labour in gainful employment as a result of innovations. Though it purports to analyse the problems of western capitalism, "it can certainly give clues to problems that may arise in underdeveloped countries, once the process of industrialisation begins, as well as provide a lesson for avoiding waste and extra hardships that attend an unplanned uncoordinated development." —

Chapter 13

THE KEYNESIAN THEORY

The Keynesian theory does not analyse the problems of underdeveloped economies. It has relevance to advanced capitalist countries. But in order to find out how far the Keynesian theory is applicable to underdeveloped economies, it is better to summarise Keynes' theory.

Summary of Keynes' Theory

Total income is a function of total employment in a country. The greater the national income, the greater the volume of employment resulting therefrom and vice versa. The volume of employment depends on effective demand. Effective demand determines the equilibrium level of employment and income. The effective demand is determined at the point where aggregate demand price equals aggregate supply price. Effective demand consists of consumption demand and investment demand. Consumption demand depends on the propensity to consume. The latter does not increase to the same extent as the increase in income. The gap between income and consumption can be made up by investment. If the requisite volume of investment is not forthcoming, the aggregate demand price will fall short of aggregate supply price. As a result, income and employment will fall till the gap is bridged up. Thus, variations in employment and income largely depend on investment. The volume of investment depends on the marginal efficiency of capital and the rate of interest. The marginal efficiency of capital is the expected rate of return from new capital assets. When profit expectations are high, businessmen invest more. The rate of interest, the other determinant of investment, depends on the quantity of money and the liquidity preference. Now investment can be raised either by raising the marginal efficiency of capital or by lowering the rate of interest. Though a rise in investment usually leads to an increase in employment, this may not happen if the propensity to consume falls at the same time. On the contrary, a rise in the propensity to consume can lead to a rise in employment without an increase in investment. Rise in investment leads to increase in income, and out of the increased income, there is more demand for consumption goods which leads to further increase in income and employment. This process tends to

¹J.M. Keynes, *The General Theory of Employment, Interest and Money*, pp. 113-115.

become cumulative. As a result, a given rise in investment causes a multiple increase in income via the propensity to consume. This relationship between increment of investment and of income is called by Keynes, the multiplier K . The multiplier "establishes a precise relationship, given the propensity to consume, between aggregate employment and income and the rate of investment. . . It tells us that, when there is an increment of aggregate investment, income will increase by an amount which is K times the increment of investment." The formula is $\Delta Y = K \Delta I$, and $1 - I/K$ represents the marginal propensity to consume. Thus the multiplier $K = 1/(1 - MPC)$. Since the marginal propensity to consume falls with increase in income, it becomes necessary to inject large doses of investment for securing higher levels of income and employment within the economy. This, in brief, is Keynes' theory of employment.

Keynes did not develop any systematic model of economic development in his *General Theory*. This was left to his predecessors like Harrod, Domar, Joan Robinson and others who made full use of the Keynesian tools to construct models of economic growth. It is only in an essay entitled *Economic Possibilities for Our Grand Children* that Keynes suggested an outline of the fundamental conditions of economic progress. "They are: (i) our power to control population; (ii) our determination to avoid civil wars and dissensions, (iii) our willingness to entrust to science, the direction of those matters which are properly the concern of science; and (iv) the rate of accumulation as fixed by the margin between our production and our consumption."²

So far as the future of capitalism is concerned, Keynes was optimistic. He may be said to be a "prophet of boom." Keynes regarded capitalism as a mechanism possessing great resilience and adaptability to mould itself according to circumstances. Keynes developed his theory of capitalist breakdown (secular stagnation) based on general over-production, chronic under-consumption, and the declining marginal efficiency of capital in future. The remedy he proposed was "deliberate state action."

Applicability of Keynes' Theory to Underdeveloped Countries

The Keynesian theory is not applicable to every socio-economic set-up. It only applies to advanced democratic capitalist economies. As Schumpeter wrote, "Practical Keynesianism is a seedling which cannot be transplanted into foreign soil; it dies there and becomes poisonous before it dies. But left in English soil, this seedling is a healthy thing and

²J.M. Keynes, *Essays in Persuasion*, p. 373.

promises both fruit and shade. All this applies to every bit of advice that Keynes ever offered."³

Before we study the applicability of Keynesian economics to underdeveloped countries, it is essential to analyse the assumptions of Keynesian economics vis-a-vis the conditions prevailing in underdeveloped economies.

Keynesian Assumptions and Underdeveloped Countries

The Keynesian economics is based on the following assumptions which limit its applicability to underdeveloped countries:

Cyclical Unemployment. The Keynesian theory is based on the existence of cyclical unemployment which occurs during a depression. It is caused by deficiency in effective demand. Unemployment can be removed by an increase in the level of effective demand. But the nature of unemployment in an underdeveloped country is quite different from that in a developed economy. In such economies unemployment is *chronic* rather than cyclical. It is not due to lack of effective demand but is the result of deficiency in capital resources. Apart from chronic unemployment, underdeveloped countries suffer from disguised unemployment. Keynes was concerned with the removal of involuntary unemployment and the problem of economic instability. So he did not refer to disguised unemployment and its solution. The remedy to the chronic and disguised unemployment is economic development to which Keynes paid no attention at all. Thus, the Keynesian assumptions of cyclical unemployment and economic instability are hardly tenable in an underdeveloped economy.

Short Period Analysis. The Keynesian economics is a short period analysis in which Keynes takes "as given the existing skill and quantity of available labour, the existing quantity and quality of available equipment, the existing technique, the degree of competition, the tastes and habits of the consumer, the disutility of different intensities of labour and of the activities of supervision and organisation as well as social structure."⁴ The development economics, however, is a long period analysis in which all the basic factors, assumed by Keynes as given, change over time.

Closed Economy. The Keynesian theory is based on the assumption of a closed economy. But underdeveloped countries are not closed economies. They are open economies in which foreign trade plays a dominant role in developing them. Such economies primarily depend on the exports of agricultural and industrial raw materials and the imports

³J.A. Schumpeter, *Ten Great Economists*, op. cit., p. 275

⁴J.M. Keynes, op. cit., p. 245, note 1.

of capital goods. Thus the Keynesian economics has little relevance to underdeveloped countries in this respect.

Excess Supply of Labour and Complementary Factors. The Keynesian theory assumes an excess supply of labour and other complementary resources in the economy. The analysis refers to a depression economy where "the industries, machines, managers and workers, as well as consumption habits, are all there, only wanting to resume their temporarily suspended functions and role."⁵ But in underdeveloped economies there is no temporary suspension of economic activity. Economic activity is static. Capital, skills, factor supplies and economic infrastructure are woefully lacking.

Labour and Capital Simultaneously Unemployed. Moreover, it can be inferred from the above assumption that labour and capital are unemployed simultaneously, according to the Keynesian analysis. When labour is unemployed, capital and equipment are also not fully utilized or there is excess capacity in them. But this is not so in underdeveloped countries. When labour is unemployed, there is no question of capital being unutilized because there is acute shortage of capital and equipment.

Tools of Keynesian Economics and Underdeveloped Countries

Thus, the assumptions on which the Keynesian theory is based are not applicable to the conditions prevailing in underdeveloped countries. We now study the principal tools of the Keynesian theory to test their validity to underdeveloped countries.

1. Effective Demand. Unemployment is caused by the deficiency of effective demand, and to get over it, Keynes suggested the stepping up of consumption and non-consumption expenditures. In an underdeveloped country, however, there is no involuntary unemployment but disguised unemployment. Unemployment is caused not by lack of effective demand but by lack of complementary resources. The concept of effective demand is applicable to those economies where unemployment is due to excess savings; and in such a situation the remedy lies in stepping up the levels of consumption and investment through various monetary and fiscal measures. But in an underdeveloped economy, income levels are extremely low, the propensity to consume is very high and savings are almost nil. All efforts to increase money incomes through monetary and fiscal measures will, in the absence of complementary resources, lead to price inflation. Here the problem is not one of raising the effective demand but one of raising the levels of employment and per capita income in the context of economic

⁵A.O. Hirschman, *The Strategy of Economic Development*, p. 54

development. "The economic progress consists of two distinct categories; one, where given the level of economic development, you move from low employment to full employment, and the other, where you move from full employment at a given level of economic development to full employment at the next higher level of economic development. The Keynesian thesis applies only to the first category."⁶

2. Propensity to Consume. One of the important tools of Keynesian economics is the propensity to consume which highlights the relationship between consumption and income. When income increases, consumption also increases but by less than the increment in income. This behaviour of consumption further explains the rise in saving as income increases. In underdeveloped countries these relationships between income, consumption and saving do not hold. People are very poor and when their income increases, they spend more on consumption goods because their tendency is to meet their unfulfilled wants. The marginal propensity to consume is very high in such countries, whereas the marginal propensity to save is very low. The Keynesian economics tells us that when the MPC is high, consumer demand, output and employment increase at a faster rate with the increase in income. But in an underdeveloped country it is not possible to increase the production of consumer goods due to the scarcity of co-operant factors, when consumption increases with the rise in income. As a result, prices rise instead of a rise in the level of employment.

3. Propensity to Save. On the saving side, Keynes regarded saving as a social vice for it is excess of saving that leads to a decline in aggregate demand. Again, this idea is not applicable to underdeveloped countries because saving is the panacea for their economic backwardness. Capital formation is the key to economic development, and capital formation is possible through increased saving on the part of people. Underdeveloped countries can progress by curtailing consumption and increasing saving, as opposed to the Keynesian view of raising consumption and reducing saving. To underdeveloped countries, saving is a virtue and not a vice.

4. Marginal Efficiency of Capital. According to Keynes, one of the important determinants of investment is the marginal efficiency of capital. There is an inverse relationship between investment and MEC. When investment increases, the MEC falls, and when investment declines, the MEC rises. This relationship is however not applicable to underdeveloped countries. In such economies, investment is at a low level and the MEC is also low. This paradox is due to the lack of capital and other resources, small size of the market, low income, low demand,

⁶V.K.R.V. Rao, *Essays in Economic Development*, op. cit., p. 61. Italics mine.

high costs, underdeveloped capital and money markets, uncertainties, etc. All these factors keep the MEC (profit expectations) and investment at a low level.

5. Rate of Interest. The rate of interest is the second determinant of investment in the Keynesian system. It is, in turn, determined by liquidity preference and the supply of money. Of the motives for liquidity preference, the transaction and precautionary motives are income elastic and they do not influence the rate of interest. It is only the demand for money for the speculative motive that affects the rate of interest. In underdeveloped countries, the liquidity preference for transaction and precautionary motives is high and for the speculative motive low. Therefore, liquidity preference fails to influence the rate of interest. The other determinant of the interest rate is the supply of money. According to Keynes, increase in the supply of money lowers the interest rate and encourages investment, income and the level of employment. But in underdeveloped countries, an increase in the supply of money leads to the rise in prices rather than to the fall in interest rate. The rate of interest in such countries is not influenced so much by the demand for and supply of money as by traditions, customs and institutional factors.

6. The Multiplier. Prof. V.K.R.V. Rao has analysed the feasibility of applying the Keynesian multiplier theory and policy implications to an underdeveloped country like India.⁷ According to Rao, Keynes never formulated the economic problems of underdeveloped countries nor did he discuss the relevance to these countries of either the objective or the policy that he proposed for the more developed countries. The result has been a rather unintelligent application of Keynesian economics to the problems of underdeveloped countries. The Keynesian concept of multiplier is based on the following four assumptions:

- (a) Involuntary unemployment
- (b) An industrialized economy where the supply curve of output slopes upward toward the right but does not become vertical till after a substantial interval.
- (c) Excess capacity in the consumption goods industries.
- (d) Comparatively elastic supply of the working capital required for increased output.

Given these assumptions, if we apply the multiplier theory on underdeveloped countries, the value of the multiplier will be apparently much higher than even in a developed country. We know that the multiplier depends on the size of the marginal propensity to consume. Since in an underdeveloped country the marginal propensity to consume

⁷The analysis that follows is based on V K R V. Rao, op. cit., Ch. 2.

is fairly high, small increments of investment are likely to induce full employment much earlier than in a rich country where the marginal propensity to consume is low. This is something paradoxical and contrary to facts. For the assumptions on which the multiplier theory is based do not hold valid in the case of an underdeveloped country. Let us test them in the light of conditions prevailing in an underdeveloped country like India.

(a) **Involuntary Unemployment.** Involuntary unemployment in the Keynesian analysis is associated with a capitalist economy where the majority of workers work for wages and where production is more for exchange than for self-consumption. According to Professor Dasgupta, the organised sector of an underdeveloped economy, with its large-scale industries and fairly well-developed banking system, comes under the scope of Keynesian economics, for it presents the features of a capitalistic economy. But involuntary unemployment in this sector is insignificant when considered in relation to the total working population of the country.⁸

In fact, in an overpopulated underdeveloped country there exists disguised unemployment. In such an economy, the existence of disguised unemployment instead of involuntary unemployment hinders the working of the multiplier theory. The secondary, tertiary and other effects of the initial increment of investment do not follow mainly because there is no labour force willing to accept employment at the current wage level. The disguised unemployed are not available at the current wage level because, *firstly*, they are not conscious of the fact that they are unemployed, and *secondly*, they are already receiving a real income which gives them at least as much satisfaction as they would get from the current wage level. Thus, the absence of involuntary unemployment and the presence of disguised unemployment in underdeveloped countries retard the operation of the multiplier towards increasing output or employment.

(b) **Inelastic Supply Curve of Output.** The supply curve of output in an underdeveloped country is inelastic which renders the working of the multiplier all the more difficult. The reason is that the nature of the consumption goods industries is such that they are unable to expand output and offer more employment. The main consumption goods industry in an underdeveloped country is agriculture which is almost stagnant. The supply curve of agricultural output is backward sloping so that an increase in the value of output does not necessarily lead to an increase in the volume of output. This is because in the short run necessary facilities are not available to the agricultural producers for

⁸A.K. Dasgupta, *Planning and Economic Growth*, pp. 32-33.

increasing output. As a result, the secondary, tertiary and other increases in income, output and employment do not come about with an initial increment of investment. The primary increase in income is spent on food and its multiplier effect is lost.

Since the marginal propensity to consume is high in underdeveloped countries, the increased income is spent on self-consumption of food products by the farmers which leads to a reduction of the marketable surplus of foodgrains. This, in turn, leads to a rise in the prices of foodgrains in the non-agricultural sector without a rise in aggregate real income. The possibility of spending more by the agriculturists on non-agricultural goods is, however, limited because there is little excess capacity in industries. Output is difficult to increase due to the non-availability of sufficient raw materials, capital equipment and skilled labour. Thus, concludes Dr Rao, "the primary increase in investment, and therefore, increase in income and employment leads to a secondary and a tertiary increase in income but not to any noticeable increase in output or employment, either in the agricultural or the non-agricultural sector. The multiplier principle, therefore, works with reference to money income but not with reference either to real income or employment."

Similarly, the absence of conditions (c) and (d) in an underdeveloped country renders the operation of the multiplier difficult. Absence of excess capacity in consumption goods industries coupled with a comparative inelastic supply of working capital for increasing output prevent the required increase in the output of consumption goods industries and the resultant therein.

Thus, the obvious conclusion is that the Keynesian principle of multiplier does not operate in an underdeveloped country like India mainly due to two reasons: *firstly*, involuntary unemployment of the Keynesian type is not to be found, and *secondly*, the supply of agricultural and non-agricultural output is inelastic due to the working of certain factors peculiar to such economies.

7. Policy Measures. Not only this, even the Keynesian policy prescriptions are hardly tenable under the conditions prevailing in underdeveloped countries. Rao maintains that an attempt to increase investment through deficit financing leads to an inflationary rise in prices rather than to an increase in output and employment. He is, therefore, of the view that "the economic policy of deficit financing and disregard for thrift advocated by Keynes for securing full employment does not apply in the case of an underdeveloped country." But in another essay "Deficit Financing for Capital Formation and Price Behaviour in an Underdeveloped Economy," he contends that deficit financing for capital formation does not lead to inflation since it is used for increasing

the capacity and thereby imparting elasticity to the supply curve of output. However, a certain measure of price rise is inevitable but it is of a "self-liquidating character." He points out that "the only question is the extent to which it is wise to resort to deficit financing; and the obvious answer is that deficit financing should not be resorted to beyond the point at which it becomes inflationary."

Dasgupta advocates the use of the Keynesian policy of public investment to achieve a higher standard of living and to provide increasing employment opportunities in underdeveloped countries. But in the absence of adequate public savings and the flow of foreign capital, he advocates deficit financing which if not accompanied by a system of price and capital issue controls, in the transitional period, will lead to inflationary rise in prices. According to Rao, in underdeveloped countries "the old-fashioned prescription of work harder and save more still seems to hold as the medicine for economic progress" than the Keynesian hypothesis that consumption and investment should be increased simultaneously. But it cannot be denied that though the Keynesian policy prescriptions do not apply *in toto* to the problems of underdeveloped countries, yet the Keynesian tools of analysis are indispensable for understanding the problems of such economies.

To conclude with Dasgupta: "Whatever the generality of the *General Theory* may be in the sense in which the term 'general' was used by Keynes, the applicability of the propositions to the *General Theory* to conditions of an underdeveloped economy is at best limited."⁹

⁹*Ibid.*, p. 34.

Chapter 14

ROSTOW'S STAGES OF ECONOMIC GROWTH

Professor W W Rostow has sought an historical approach to the process of economic development. He distinguishes five stages of economic growth, viz., (1) the traditional society; (2) the pre-conditions for take-off; (3) the take-off; (4) the drive to maturity; and (5) the age of high mass-consumption.

The Traditional Society

A traditional society has been defined "as one whose structure is developed within limited production functions based on pre-Newtonian science and technology and as pre-Newtonian attitudes towards the physical world."¹ This does not mean that there was little economic change in such societies. In fact, more land could be brought under cultivation, the scale and pattern of trade could be expanded, manufactures could be developed and agricultural productivity could be raised along with increase in population and real income. But the undeniable fact remains that for want of a regular and systematic use of modern science and technology 'a ceiling existed on the level of attainable output per head'. It did not lack inventiveness and innovations, but lacked the tools and the outlook toward the physical world of the post-Newtonian era.

The social structure of such societies was hierarchical in which family and clan connections played a dominant role. Political power was concentrated in the regions, in the hands of the landed aristocracy supported by a large retinue of soldiers and civil servants. More than 75 per cent of the working population was engaged in agriculture. Naturally, agriculture happened to be the main source of income of the state and the nobles, which was dissipated on the construction of temples and other monuments, on expensive funerals and weddings and on the prosecution of wars.

¹W W Rostow, *The Stages of Economic Growth*, 1960. Also, the *Process of Economic Growth*, 1953. Trends in the Allocation of Resources in Secular Growth, Ch 15 in *Economic Progress*, (ed.) L H Dupre and D C Hague, 1955. 'The Take-off into Self-Sustained Growth', in Aggarwal & Singh, *op cit*. "The Stages of Economic Growth," *Economic History Review*, August 1969.

The Pre-conditions for Take-off

The second stage is a transitional era in which the pre-conditions for sustained growth are created. The pre-conditions for sustained growth were created slowly in Britain and Western Europe, from the end of the 15th and the beginning of the 16th centuries, when the Mediaeval Age ended and the Modern Age began. The pre-conditions for take-off were encouraged or initiated by four forces: The New Learning or Renaissance, the New Monarchy, the New World and the New Religion or the Reformation. These forces led to 'Reasoning' and 'Scepticism' in place of 'Faith' and 'Authority', brought an end to feudalism and led to the rise of national states; inculcated the spirit of adventure which led to new discoveries and inventions and consequently the rise of the bourgeoisie—the elite—in the new mercantile cities. Thus these forces were instrumental in bringing about changes in social attitudes, expectations, structure and values. Generally speaking, the pre-conditions arise not endogenously but from some external invasion. For example, the pre-conditions ended in Europe (excluding Britain) with the domination of Napoleon Bonaparte whose victorious armies set in motion new ideas and attitudes which brought about changes in the structure of traditional societies and paved the way for the unification of Germany and Italy.

In any case, the process of creating pre-conditions for take-off from traditional society follows along these lines:

"The idea spreads that economic progress is possible and is a necessary condition for some other purpose, judged to be good; be it national dignity, private profit, the general welfare, or better life for the children. Education for some at least, broadens and changes to suit the needs of modern activity. New types of enterprising men come forward in the private economy, in government, or both, willing to mobilize savings and to take risks in pursuit of profit to modernization. Banks and other institutions for mobilizing capital appear. Investments increase, notably in transport, communications and in raw materials in which other nations may have an economic interest. The scope of commerce, internal and external, widens. And here and there, modern manufacturing enterprise appears, using the new methods."²

The pre-conditions for sustained industrialization, according to Rostow, have usually required radical changes in three non-industrial sectors: First, a build-up of social overhead capital, especially in transport, in order to enlarge the extent of the market, to exploit natural resources productively and to allow the state to rule effectively.

Second, a technological revolution in agriculture so that agricultural

²*Ibid.*, pp. 6-7.

productivity increases to meet the requirements of a rising general and urban population

Third, an expansion of imports, including capital imports, financed by efficient production and marketing of natural resources for exports.

The continuous development and expansion of modern industry was mainly possible by the ploughing back of profits into fruitful investment channels. As Rostow says: "The essence of the transition can be described legitimately as a rise in the rate of investment to a level which regularly, substantially and perceptibly outstrips population growth."

The role of social and political factors in creating the pre-conditions has already been explained in the beginning of this 'stage'. But the political forces deserve further explanations with reference to underdeveloped countries and colonial territories.

It was "reactive nationalism"—reaction against the fear of foreign domination which acted as a potent force in bringing about the transition. In Japan it was the demonstration effect, not of high profits or new manufactured consumers' goods, but of the Opium War in China in the early 1840's and Commodore Perry's seven black ships, a decade later, that cast the die for modernization.

But in the colonies, the policy followed by the colonial power to build up social overhead capital, ostensibly to meet its own requirements, helped in moving the traditional society along the transitional path. The spread of modern education brought about a gradual transformation in thought, knowledge and attitude of the people, and a growing spirit of nationalism started resenting the colonial rule. Lastly, under the influence of a powerful international demonstration effect, people wanted the products of modern industry and modern technology itself.

The Take-off

The take-off is the 'great watershed' in the life of a society "when growth becomes its normal condition . . . , forces of modernization contend against the habits and institutions. The value and interests of the traditional society make a decisive breakthrough; and compound interest gets built into the society's structure." By the phrase compound interest Rostow implies 'that growth normally proceeds by geometric progression, such as a saving account if interest is left to compound with principal.' At another place, Rostow defines the take-off "as an industrial revolution, tied directly to radical changes in the methods of production, having their decisive consequence over a relatively short period of time."

The take-off period is supposed to be short, lasting for about two decades. Rostow has given the following tentative take-off dates for

those countries which are considered to be airborne.

<i>Country</i>	<i>Take-off</i>	<i>Country</i>	<i>Take-off</i>
Great Britain	1783-1802	Japan	1878-1900
France	1830-1860	Russia	1890-1914
Belgium	1833-1860	Canada	1896-1914
United States	1843-1860	Argentina	1935
Germany	1850-1873	Turkey	1937
Sweden	1868-1890	India } China }	1952

Conditions for Take-off. The requirements of take-off are the following three related but necessary conditions:

"(1) A rise in the rate of productive investment from, say, 5 per cent or less to over 10 per cent of national income or net national product;

(2) the development of one or more substantial manufacturing sectors with a high rate of growth;

(3). the existence or quick emergence of a political, social and institutional framework which exploits the impulses to expansion in the modern sector and gives to growth an outgoing character."³ Let us examine these conditions in detail.

(1) **Rate of Net Investment over 10 Per Cent of National Income.** One of the essential conditions for take-off is that the increase in per capita output should outstrip the growth of population to maintain a higher level of per capita income in the economy. As Rostow explains: "If we take the marginal capital/output ratio for economy in its early stages of economic development at 3.5:1 and if we assume, as is not abnormal, a population rise 1-1.5 per cent annum it is clear that something between 3.5 and 5.25 per cent of NNP must be regularly invested if NNP per capita is to be sustained. An increase of 2 per cent per annum in NNP per capita requires, under these assumptions that something between 10.5 and 12.5 per cent of NNP be regularly invested. By definition and assumption, then, a transition from relatively stagnant to substantial regular rise in NNP per capita under typical population conditions, requires that the proportion of national product productively invested should move from somewhere in the vicinity of 5 per cent to something in the vicinity of 10 per cent."⁴

The typical case explained by Rostow is based on the supposition that the incremental capital-output ratio and the rate of population growth remain constant. It thus precludes the effects of increased labour force

³Ibid., p. 39.

⁴Ibid., pp. 52-53 and 57.

and improved technology on national income. However, during the take-off capital-output ratio tends to decline with the change in investment pattern and a rise in the proportion of net investment to national income takes place from 5-10 per cent, thus definitely outstripping the growth of population.

(2) **Development of Leading Sectors.** Another condition for take-off is the development of one or more leading sectors in the economy. Rostow regards the development of leading sectors as the 'analytical bone structure' of the stages of economic growth. There are generally three sectors of an economy:

(a) *Primary Growth Sectors*, where possibilities of innovation or of exploiting new or unexplored resources lead to a higher growth rate than in the rest of the economy. The cotton textiles of Britain and New England in the early stages of growth fall into this category.

(b) *Supplementary Growth Sectors*, where rapid growth takes place as a consequence of development in the primary growth sectors. For example, the development of railways is a primary growth sector and the expansion of iron, coal and steel industries may be regarded as a supplementary growth sector.

(c) *Derived Growth Sectors*, where growth takes place "in some fairly steady relation to the growth of total income, population, industrial production or some overall modestly increasing variable." For example, the production of food and the construction of houses in relation to population.

Historically, these sectors have ranged from textiles in Britain and New England to railways in the United States, the USSR, Germany and France; to modern timber cutting in Sweden. In addition, modern agriculture also forms part of the leading sectors. For example, the rapid growth of Denmark and New Zealand has been due to the scientific production of bacon, eggs, and butter, and mutton and butter respectively. Thus, "there is clearly, no one sectoral sequence to take-off, no single sector which constitutes the magic key."

According to Rostow, the rapid growth of the leading sectors depends upon the presence of four basic factors:

First, there must be an increase in the effective demand of their products generally brought about by dishoarding, reducing consumption, importing capital or by a sharp increase in real incomes.

Second, a new production function along with an expansion of capacity must be introduced into these sectors.

Third, there must be sufficient initial capital and investment profits for the take-off in these leading sectors.

Lastly, these leading sectors must introduce expansion of output in other sectors through technical transformations.

(3) Cultural Framework that Exploits Expansion. The last requirement for take-off is the existence or emergence of cultural framework that exploits the impulses to expansion in the modern sector. A necessary condition for this is the ability of the economy to mobilize larger savings out of an expanding income to raise effective demand for the manufactured products, and to create external economies through the expansion of leading sectors. As Rostow says, "Take-off requires the massive set of pre-conditions, going to the heart of a society's economic organization, its politics and its effective scale of values. . . . It usually witnesses a definitive social, political and cultural victory of those who would modernize the economy over those who would either

cling to the traditional society or seek other goals....By and large, it persuades the society to persist and to concentrate its efforts on extending the tricks of modern technology beyond the sectors modernized during the take-off."⁵

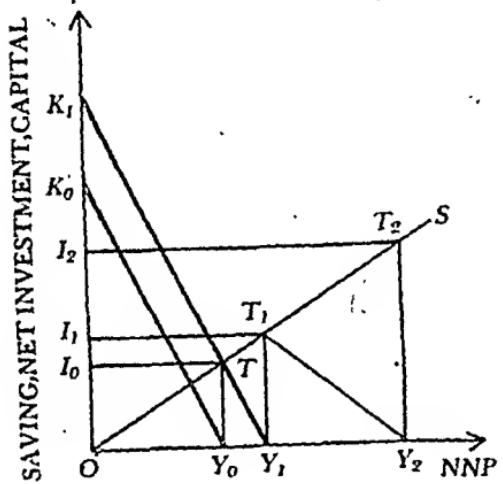


FIG. 14.1

investment and capital. S is the saving schedule. $K_0 Y_0$ and $K_1 Y_1$ are the curves of capital-output ratio drawn as downward sloping to simplify the figure. They are drawn parallel to each other to indicate a constant capital-output ratio, i.e., $OK_0/OY_0 = OK_1/OY_1$. $TY_0/Y_0 Y_1$ is the marginal capital-output ratio.

To start with, the society has a very flat saving curve and a very steep capital-output ratio curve in the pretake-off stage. It implies that people save little out of their income and the capital-output ratio is very high. In the time period 0, as OI_0 net investment is made it tends to increase the capital stock which becomes productive in time period 1 and raises NNP to OY_1 . Then in the take off stage when $OI_1 (=T_1 Y_1)$ investment takes place, some major stimulus leads to the growth of the productive capital more quickly leading to a fall in the capital-output ratio to $T_1 Y_1/Y_1 Y_2$. As a result, the investment pattern changes and the

The take-off stage is explained in Fig. 14.1. The horizontal axis represents NNP and the vertical axis the amount of saving, net

⁵Ibid., p. 58. Italics mine.

capital-output ratio curve becomes flatter. It is $T_1 Y_2$. NNP increases to OY_2 which further raises net investment to $OI_2 (=T_2 Y_2)$. The economy has taken off, and if this pattern of growth is continued it will become self-sustained.

Thus, the take-off is initiated by a sharp stimulus, such as the development of a leading sector or a political revolution which brings an outgoing change in the production processes, a rise in proportion of net investment to over 10 per cent of national income outstripping the growth of population.

The Drive to Maturity

Rostow defines it "as the period when a society has effectively applied the range of (then) modern technology to the bulk of its resources." It is a period of long sustained economic growth extending well over four decades. New production techniques take the place of the old ones. New leading sectors are created. Rate of net investment is well high over 10 per cent of national income. And the economy is able to withstand unexpected shocks.

Rostow gives the symbolic dates for technological maturity of the following countries:

Great Britain	1850	Sweden	1930
United States	1900	Japan	1940
Germany	1910	Russia	1950
France	1910	Canada	1950

When a country is in the stage of technological maturity, three significant changes take place:

First, the character of working force changes. It primarily becomes skilled. People prefer to live in urban areas rather than in rural. Real wages start rising and the workers organize themselves in order to have greater economic and social security.

Second, the character of entrepreneurship changes. Rugged and hardworking masters give way to polished and polite efficient managers.

Third, the society feels bored of the miracles of industrialization and wants something new leading to a further change.

The Age of High Mass-Consumption

The age of high mass-consumption has been characterised by the migration to suburbia, the extensive use of the automobile, the durable consumers' goods and household gadgets. In this stage, the balance of attention of the society is shifted from supply to demand. From problems of production to problems of consumption and

sense." However, three forces are discernible that tend to increase welfare in this post-maturity stage. First, the pursuit of national policy to enhance power and influence beyond national frontiers. Second, to have a welfare state by a more equitable distribution of national income through progressive taxation, increased social security and leisure to the working force. Last, decisions to create new commercial centres and leading sectors like cheap automobiles, houses, and innumerable electrically operated household devices, etc.

The tendency towards mass consumption of durable consumer goods, continued full employment and the increasing sense of security has led to a higher rate of population growth in such societies.

Historically, the United States was the first to reach the age of high mass consumption in the 1920's, followed by Great Britain in the 1930's, Japan and Western Europe in the 1950's and the Soviet Union after the death of Stalin.

Criticism of the Stages of Economic Growth

"Rostow's *The Stages of Economic Growth* is the most widely circulated and highly commented piece of economic literature in recent years. Economists are one in doubting the authenticity of the division of economic history into five 'stages of growth' as presented by Rostow. Are these 'stages' inevitable like birth and death or do they follow a set 'sequence' like childhood, adolescence, maturity and old age? Can one tell with sufficient precision that one stage is complete and the other has begun? To maintain that every economy follows the same course of development with a common past and the same future is to overschematize the complex forces of development and to give the sequence of stages a generality that is unwarranted."⁶ Let us comment on these 'stages' in detail.

(1) Traditional Society not Essential for Development. A number of nations such as the United States, Canada, New Zealand and Australia were born free of traditional societies and they derived the preconditions from Britain, a country already advanced. So it is not essential for growth that a country must pass through the first stage.

(2) Preconditions may not Precede the Take-off. In the case of 'preconditions', it is not necessary that they must precede the take-off. For example, there is no reason to believe that an agricultural revolution and accumulation of scientific capital and transport must take place before the take-off.

⁶G.M. Meier, *Leading Issues in Development*, review of Rostow's 'Stages' wrote that which concerns us is on how one society can move into anything reasonably better.

(3) Overlapping in the Stages. In fact; the experience of most countries tells us that development in agriculture continued even in the take-off stage. The take-off in the case of New Zealand and Denmark is attributed to agricultural development. Similarly, social overhead capital in transport, especially in railways, has been one of the leading sectors in the take-off, as Rostow himself tells us. It shows that there is considerable overlapping in the different stages.

(4) Criticism of the Take-off. The most widely discussed and controversial stage is the take-off. As Cairncross has stated: "The stage that has struck the public mind most forcibly is undoubtedly that of the take-off. Largely, no doubt, because the aeronautical metaphor—prolonged in the phrase "into self-sustained growth"—suggests at once an effortlessness and finality congenial to modern thought. The reactions of historians and economists have been less favourable. They have grown accustomed to emphasizing the continuity of historical change, to tracing back to a previous age the forces producing a social explosion and to explaining away the apparent leaps in economic development. They are inclined, therefore, to regard Rostow as a latter day Toynbee, stressing a discontinuity that is no more than symptomatic of the underlying forces at work and making the symptoms more decisive than they really were"?⁷

The Take-off Dates are Doubtful. Economic historians are sceptical about the take-off dates suggested by Rostow. The dates also vary from publication to publication. For instance, the take-off year for India in the article. *The Take-off into Self-sustained Growth* was given as 1937, while in the later publications it has been put as 1952. In fact, it will take many years of research to determine the correctness or otherwise of the dates suggested by Rostow.

Possibilities of Failure not Considered. According to Habakkuk. "In his aeronautical concept of growth he (Rostow) ignored the bump downs and crash landings."

Further, 'the analysis of the take-off neglects the effect of historical heritage, time of entry into the process of modern economic growth, degree of backwardness, and other relevant factors on the characteristics of the early phases of modern economic growth in the different countries.'

Even the necessary conditions for take-off are not without *limitations*.

(a) *Growth Rate of Investment is Arbitrary.* The first condition, of a rise in the rate of productive investment to over 10 per cent of national income is arbitrary. As Das Gupta has remarked, "What is the sanctity about his particular percentage, except that with 10 per cent annual

⁷A K. Cairncross, *op. cit.*, p. 138

saving one may expect an economy to acquire a higher trend of per capita income unless the capital-output ratio and the rate of population growth are abnormally high. A demarcation along this line is surely arbitrary."⁸ Moreover, there is no historical data to justify a sharp increase in the *saving-income ratio* at the beginning of industrialization. On the contrary, this ratio has been increasing gradually as growth proceeded.

(b) *Some Specific Industries cannot be the Leading Sectors.* The second condition relates to the rapid development of leading sectors. Rostow has laid emphasis on a limited number of leading sectors like textiles, railroads, etc. But economic growth has not always been governed by the development of a few leading sectors. Cairncross questions the utility of this idea in helping us understand the take-off. And there appears to be no basis on which to recognize a leading sector *ex ante*. He asks, "What connection is there between the conception and later stages? Why must the leading sectors be in manufacturing? If railway building can qualify, why not retail distribution or agriculture?"⁹

(c) *Little Difference between the First and Third Condition.* The last condition for take-off is the existence or emergence of a cultural framework which gives to growth an outgoing character. According to Rostow, the necessary condition for this is the 'capacity to mobilize capital, from domestic sources,' and this is in fact nothing else but the first condition of take-off restated. Moreover, as Cairncross opines, "A definition in these terms tells us nothing about the factors at work since we can only deduce their existence from the fact of take-off, never the likelihood of take-off from the ascertained fact of their existence."¹⁰

(5) *The Stage of Drive to Maturity Puzzling and Misleading.* It contains all the features of the take-off—rate of net investment over 10 per cent of national income, development of new production techniques, leading sectors and institutions. Then where lies the need for a separate stage where the growth process becomes self-sustained. It can be self-sustained even in the take-off stage. In fact, as observed by Kuznets, "no growth is purely self-sustaining or self-limiting. The characterization of one stage of growth as self-sustained and of others, by implication, as lacking that property, requires substantive evidence and analysis not provided by Rostow."¹¹

(6) *The Stage of High Mass Consumption not Chronological.* The age of high mass consumption is so defined that certain countries like Australia and Canada have entered this stage before even reaching

⁸A.K. Dasgupta, *Planning and Economic Growth*, p. 58

⁹Op. cit., p. 142.

¹⁰Ibid., p. 143.

¹¹In G.M. Meier, op. cit.

maturity. According to one critic, "the period of mass-consumption is nothing else but *minus* its ideological overtone."

Importance and Limitations of Take-off for Underdeveloped Countries

Importance. The concept of take-off is ideally suited for the industrialization of underdeveloped countries. As Dasgupta has written, "The term lacks precision and yet it is suggestive and can be given interpretation which is useful for an understanding of the process of economic development of an underdeveloped country. It is indeed the vagueness of the term that gives it strength for one can put an interpretation upon it to suit the conditions of the economy in which one is interested."¹²

Of the three necessary conditions for take-off, the first two, namely, capital formation over 10 per cent of national income and the development of one or more leading sectors, are helpful in the process of industrialization of underdeveloped countries. So far as the first condition is concerned, there can be little doubt about achieving that percentage. But the second condition can be moulded to suit a country's environments. For instance, the leading sectors can be in agriculture or in the production of primary products for exports. The last condition is more important in the context of underdeveloped countries where monetary and political institutions, and skills and technology are at a low level whereby they retard the expansion of the modern sector.

Limitations

From the standpoint of underdeveloped countries the take-off has the following limitations

Capital-Output Ratio not Constant. In calculating the aggregate capital requirements of underdeveloped countries Rostow takes a constant capital-output ratio. This implies constant returns to scale. This assumption is valid in the case of advanced economies. But underdeveloped economies are characterized by the predominance of agriculture and primary production. Given unchanged techniques and increasing population, their natural resources result in conditions of diminishing returns to scale for the expansion of the economy as a whole.¹³

Silent over the Removal of Unemployment. Dasgupta regards the 'elimination of an accumulated backlog of unemployment' as 'the minimum that the take-off must accomplish' in an underdeveloped economy. According to him, "once full employment is secured the economy is raised to a level where growth is self-sustained and

¹²Op. cit., p. 156

¹³H. Myint, *The Economics of the Developing Countries*, 1964

spontaneous." Taking India's case, he says. "Judged by the employment criterion, despite all the investment that has taken place over the period, our economy seems to be receding." Therefore, it is imperative for an over-populated country to have the elimination of unemployment as one of the conditions for take-off.

Element of Ambiguity. Besides, there is an element of ambiguity in this concept of take-off when applied to an underdeveloped country. During the take-off investment increases with a rise in the national income without reducing the average propensity to consume. Technically speaking, there is an "excess of the 'marginal' rate of saving over the average rate of saving, so that the average rate keeps on rising. . . . (and) the final level is characterized by a constant, though high, average rate of savings." To Dasgupta, "This does not seem to be a sensible interpretation. For even in a highly developed economy the average rate of saving may not remain constant."

Economic Development not Spontaneous. The concept of take-off suggests an element of spontaneity which is of little significance in the context of an underdeveloped economy. But "a take-off is not an instantaneous process. It is an exercise that requires time and from which, after a certain speed has been attained and a portion of the runaway used up, there is no turning back or even safe throttling down."¹⁴

Aeronautical Concept not Correct. Professor Bicanic, however, does not agree with the symbolical presentation of the take-off, because it appears to him like a light flying animal just got cut off from the earth and floating in the air. It is like creeping over a very difficult threshold of economic development. One has to creep over it, one can't fly over it. It is not a take-off but a very painful process which every underdeveloped country has to go through.¹⁵

The Take-Off and India

According to Rostow, one of the important conditions for take-off is the raising of saving and investing ratio from 5 per cent or less to over 10 per cent of national income and maintaining it for two or more decades. It is a critical transitional stage of self-sustained growth. In India at 1960-61 prices the ratio of investment of national income increased from 5.5 per cent in 1950-51 to 10.4 per cent in 1964-65 and the ratio of domestic savings to national income from 5.5 per cent to 10.5 per cent. Thus, India which entered the take-off stage in 1950-51 (1952 according to Rostow), can be definitely said to have taken-off in the year 1964-65.

¹⁴John P. Lewis, *Quiet Crisis in India*.

¹⁵Bicanic, R., in *Paths to Economic Growth*, (ed.) A. Datta.

when both the saving and investment ratios were above 10 per cent

The second condition for take-off is the development of one or more leading sectors in the economy. By 1964-65 the agricultural, industrial, and tertiary sectors had developed considerably. To illustrate, the index of agricultural production (with June 1950 as the base) rose from 45.6 in 1950-51 to 158.4 in 1964-65 and the index of industrial production, (with 1956 as the base) from 73.5 to 186.9 India also seems to fulfil this condition of take-off.

India also fulfils the third condition for take-off. Planned development has generated the cultural framework that leads to the expansion of the modern sector. The skills and attitudes of the people are undergoing changes, modern technology is permeating the traditional society and the administrative efficiency and honesty have been showing signs of improvement

But there is no hard-and-fast rule for the presence of all the three conditions for take-off. Nor should one jump to the conclusion that India has definitely taken-off during the Third Plan on the basis of the existence of the three Rostowian conditions. It appears that India has tried a premature take-off. Professor Myint warns that a premature attempt at take-off "can result not only in wastages of scarce resources wrongly or inefficiently invested but also in a sense of disappointment and frustration which may have far-reaching psychological and political consequences." This has actually happened in the case of the Indian economy. Between 1950-51 and 1964-65, India's net national income (at 1960-61) increased at a compound rate of 3.8 per cent per annum from Rs 9,850 crores to Rs 16,630 crores but per capita income in real terms increased at an annual average rate of 1.8 per cent, the rate of population growth being 2.5 per cent per year. Coupled with these trends is the existence of inflationary pressures in the economy which cast serious doubts about India having attained the take-off stage. In the last year (1965-66) of the Third Plan, national income declined by 5.6 per cent. Per capita real income in 1965-66 was almost the same as in 1960-61. Recession in the economy during 1966-68 made matters still worse. As revealed by the Estimates Committee of the Lok Sabha in its ninth report, there was nearly 80 to 90 per cent of unutilized capacity in some industries in 1965-66 and even in the case of priority industries, idle capacity was 40 per cent. Further the rate of domestic savings declined from 10.5 per cent in 1965-66 (at 1960-61 prices) to 8.2 per cent in 1966-67 and to 8 per cent in 1967-68. In real terms, it would be even below the pre-Plan period.

The Third Plan was conceived as "of intensive development leading to economy." It aimed at raising net

1960-61 to 14-15 per cent of national income and that of domestic savings from 8 per cent in 1960-61 to 11.5 per cent of national income by the end of the Third Plan. But the Third Plan failed to bring about the required rates of growth in savings and investment. Savings rose from 8 to 10.5 per cent and investment from 11 to 13 per cent. Three consecutive crop failures plunged the economy into a morass. An era of Annual Plans ensued. The Draft Fourth Plan was scrapped and postponed. However, it can be concluded in terms of Rostow's main condition of a rise in the proportion of net investment to over 10 per cent, that the Indian economy had taken-off during the Third Plan.

Chapter 15

NURKSE'S THEORY OF DISGUISED UNEMPLOYMENT AS A SAVING POTENTIAL

MEANING OF DISGUISED UNEMPLOYMENT

The concept of disguised unemployment was introduced into the theory of underdevelopment by Rosenstein-Rodan in his famous article "Problems of Industrialization of Eastern and South-Eastern Europe" and was elaborated by Ragnar Nurkse. In its strict sense, it means that given the techniques and productive resources, the marginal productivity of labour in agriculture, over a wide range, is zero in overpopulated underdeveloped countries. It is, therefore, possible to withdraw some surplus labour from agriculture without reducing total farm output. Such unemployment is found where too many workers are engaged in agricultural operations because of the lack of alternative or complementary employment opportunities. If, for example, seven persons are engaged in cultivating a farm that could be cultivated by five, it implies that all the seven workers are not fully employed. If two are withdrawn and given some alternative job, the total output of the farm will not be reduced when five workers are left to do the same work. It means that two workers are not contributing anything to farm output and their marginal productivity is zero.

Professor A.K. Sen does not agree with this interpretation of disguised unemployment. He asks, "If marginal productivity of labour over a wide range is zero, why is labour being applied at all?" The confusion arises from failure to distinguish between labour and labour time. In Sen's views, "It is not that too much labour is being spent in the production process, but that too many labourers are spending it. Disguised unemployment thus normally takes the form of a smaller number of working hours per head."¹ If, for instance, in a family 35 hours' work a day is done on a farm, the marginal product of the 35th hour falls to zero. Let us further assume that 7 members work on the farm for 5 hours a day. Given the same technique and production process, if two labourers go away, the remaining 5 labourers would be able to maintain the same level of output by working harder and longer

¹A K. Sen, *Choice of Techniques*, pp. 3-5

for 7 hours a day. Thus there is disguised unemployment of two labourers. The amount of disguised unemployment also depends on the number of hours' work a day per labourer. If it is fixed at 7 hours a day, then again two labourers are disguised unemployed even if they work on the farm. It is thus 'the marginal productivity of the labourer that is nil over a wide range and the productivity of labour may be just equal to zero at the margin.' Sen explains the difference between the two approaches with the help of the Fig. 15.1.

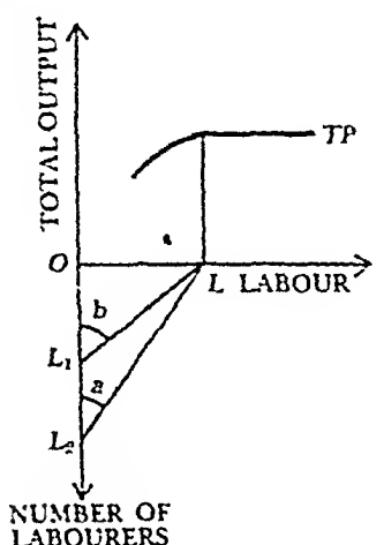


FIG. 15.1

TP is the total output curve which becomes horizontal when OL labour is employed. It implies that the marginal product of labour becomes zero with OL labour hours and it is no use employing labour beyond this point. However, the number of labourers engaged in agricultural operations is OL_2 and each works for $\tan b$ hours. But the working hours per labourer are $\tan a$. Thus L_2L_1 labourers are disguised unemployed. It shows that marginal productivity of

labour is zero at point L and that of labourer over the range L_2L_1 is nil.

THE THEORY

Ragnar Nurkse² developed the thesis that disguised unemployment in overpopulated underdeveloped countries can be a source of capital formation. According to Nurkse, the state of disguised unemployment in underdeveloped countries constitutes "a disguised saving potential." Underdeveloped countries suffer from disguised unemployment on a mass scale. With existing techniques of production in agriculture, it is possible to remove from land a large proportion of the surplus labour force without reducing agricultural output. This surplus labour force can be put to work on capital projects, like irrigation, drainage, roads, railways, houses, factories, training schemes, community development,

²R. Nurkse, op. cit., Ch. 11.

education and health, etc. In this way rural underemployment can be a source of capital formation.

Nurkse has split up the problem of mobilizing the disguised unemployed as a saving potential in two parts: firstly, how to feed the surplus population transferred to the various capital projects and secondly, how to provide tools to the new workers to work with.

Feeding the Surplus Population. Though the first problem can be solved to some extent by voluntary savings, by taxation and even by importing foreign capital, yet the magnitude of the problem requires that it should be 'self-financing'. At present the 'unproductive' surplus labourers are being supported by the 'productive' labourers. The latter are doing 'virtual' saving since they are producing more than they consume. But this saving is running waste because it is being utilized in feeding the 'unproductive' labourers whose contribution to output is zero or negligible. If the 'productive' peasants working on land continue to feed their 'unproductive' dependents working on capital projects, 'then their virtual saving would become effective saving'. But this capital formation "through the use of surplus labour is self-financing only if the mobilization of the concealed saving potential is 100 per cent successful." Nurkse further emphasizes, "It seems to be a question of all or nothing. Either the whole of the food surplus that becomes available on the land through the withdrawal of the surplus labourers is mopped up to feed the *unproductive labourers in their new occupations* or nothing can be done at all."³ But the snag is that there may arise certain 'leakages' in this food fund available for capital formation: (a) The newly employed workers may start consuming more food than they were consuming at the farms, (b) the peasants left behind on the farms may themselves start consuming more food than before, and (c) the problem of bearing the cost of transporting food from the farms to the capital projects. Though it is not possible to plug these 'leakages' fully, Nurkse suggests that this can be done by complementary savings in other sectors of the economy, by state action in requisitioning the surplus food stocks from the peasantry and even by meeting the deficit from imported food stocks. He also stresses the need for levying indirect taxes on commodities that enter into the peasants' budget: taxation in kind, a tax on land owners and on their rents may further help in mopping up the food surplus. Nurkse's firm conviction is that "whatever the machinery employed may be, some form of collective saving effected by the state may prove to be indispensable for the mobilization of the saving potential implicit in disguised unemployment."

Financing of Tools. The second problem relates to the financing

tools to be provided to new construction project workers. Even though capital goods can be imported yet as usual an act of domestic saving is required in this case. In some of the densely populated agricultural economies, there is not only underemployment of labour but also of capital. Due to small scattered plots, large number of farm tools, implements and draught animals are used. But if these small and scattered holdings are consolidated, certain simple tools will be released which the investment workers can use in new capital projects. Moreover, simple tools and equipment that the newly employed workers require can be made by the workers themselves with their own hands. Such simple tools can also be imported from abroad in exchange for the country's exports. But it is essential that only that capital equipment should be imported which can be easily adapted to the prevailing factor endowments in the country. As Nurkse puts it, "Much simpler tools and equipment may be appropriate to the relative factor endowments of countries of this type in the early stages of development."

The sum up, "Hands" would move from the village to the new construction sites; with the hands would also move mouths; and with less mouths to feed in the village the possibility would be created for food to move out of the village to supply the needs of a swollen army of construction workers, without any fall in consumption on the part of those remaining in the village."⁴ Thus a process of economic development is generated through the use of the disguised unemployed. Nurkse, therefore, rightly believes that there is concealed saving potential in rural underemployment in overpopulated underdeveloped countries that can be effectively utilized as a means of capital formation.

Limitations of the Concept

The concept of disguised unemployment as a concealed saving potential has led to considerable controversy. Economists have questioned the practicability of this concept in democratic underdeveloped economies. The various difficulties that stand in its working are examined below:

1. **Propensity to Consume not Constant.** Nurkse assumes that the propensity to consume of both the newly employed workers and those left on the farms remains constant. But this is an untenable assumption. Kurihara is of the view that as a result of transferring the disguised unemployed to the capital-goods sector, the propensity to consume may

⁴M. Dobb, *Some Aspects of Economic Development*, 1951. Dobb propounded this thesis, independent of Nurkse, in one of the lectures delivered at the Delhi School of Economics.

rise in the case of the whole economy. "In this event the pressure will increase for allocating to the consumer-goods sector those resources which might otherwise be used to increase output of capital goods."⁵

2 Problems of Collection and Distribution of Food Surplus. Nurkse fails to visualise the problems connected with the mopping up and the distribution of the food surplus from those working on the farms to those working on the new capital projects. How is the food to be collected and distributed to workers at the project sites? How much each farm is to contribute to the food fund, if such a fund is created? If farm owners refuse to supply food, what action is contemplated? Nurkse's thesis does not offer any solution to these problems.

3. Marketable Surplus does not Increase. Further, it is doubtful that the withdrawal of surplus labour from agriculture would increase the marketable surplus. Kaldor hold that in underdeveloped countries peasants produce for self-sufficiency rather than for profits and the amount supplied to the non-agricultural sector tends to be governed by the need for industrial products. Since as a result of reduction of farm hands the demand for industrial products is also reduced, it is possible that a reduction in surplus labour force would be followed by a reduction, rather than an increase, in the amount of marketable surplus for the towns.⁶

4. Difficult to Mobilize Disguised Unemployed. It is not easy to mobilize the disguised unemployed and send them to the new capital projects. They are so intensely attached to their family and land that they do not like to leave their kith and move to the new projects. Majority of the disguised unemployed, however, find their way into the armed forces, as is the case in India.

5. Not Possible to Get Work without Payment of Wages. In Nurkse's analysis, the problem of payment of wages to the investment workers does not arise because the entire process of capital formation is assumed to be 'self-financing.' This is unrealistic. Unless wages are paid, workers cannot be attracted to the new capital projects. As Lewis remarks, "Unpaid labour may be very important in countries which resort to compulsory labour but its scope in other countries is limited."

6. Successful only in Totalitarian States. As a corollary to the above, this 'up by the bootstraps' approach can succeed only under strong totalitarian governments and has little relevance to democratic underdeveloped countries. As a matter of fact, this approach to capital formation has succeeded in China where the masses have been forced to work on capital projects by providing only minimum rations required

⁵K. Kunihara, op. cit., pp. 119-120

⁶N. Kaldor, Essays on Economic Stability and Growth, 1960.

for bare subsistence. Nurkse himself admitted this fact when he declared later on, "Some of the underdeveloped countries do have potential domestic resources available for capital construction. But it may be very hard nay impossible to mobilize them without resorting to coercive methods."⁷

7. Problems of Inflation and Balance of Payments. The task of providing work to the surplus labour force is beset with a number of difficulties. Lewis maintains that what holds back the use of such labour is not the lack of fixed capital but the lack of working capital. Assuming that working capital is available, the employment of surplus labour is likely to lead to inflation in the economy. When the newly employed workers are paid wages, their demand for consumer goods increases without a corresponding increase in the output of consumer goods. Hence prices will rise. "This will also stimulate imports of consumer goods, with unfortunate effect on the balance of payments, and if these effects are prevented by strict control of imports and of exports, the effect is merely to swell the sum of money circulating at home, and so to put greater pressure on the domestic prices."⁸

8. Unskilled Labour Fails to Increase the Output of Fixed Capital. According to Kurihara, the use of unskilled and ill-equipped labour may not increase significantly the output of fixed capital which is of crucial importance to industrialization. The shifting of the disguised unemployed to investment projects of a labour-intensive type requiring no special skill or equipment cannot be expected to produce fixed capital "in quantities and qualities that are of immediate and adequate use to industrialization. The most that could be expected of such labour-intensive projects is a limited amount of preliminary capital formation (e.g., swamp clearance of factory sites, dirt road building for modern highways, and handicrafts serving as raw materials for machine made manufactures). But it takes machines to make machines on a scale large enough to speed up industrialization. And the disguised unemployed are an ineffective substitute for such machines to make machines."⁹

9. Unrealistic Assumption of Technological Neutrality. Kurihara¹⁰ further maintains that the tacit assumption of technological neutrality involved in Nurkse's idea of disguised unemployment as a 'saving' potential is untenable and unhelpful. During the process of industrialization, if the capital-goods sector adopts labour-saving devices, it will set a limit to the full mobilization of the disguised unemployed in

⁷R. Nurkse, *Lectures on Economic Development*, p. 200 Italics mine.

⁸W.A. Lewis, *op. cit.*, p. 218.

⁹K. Kurihara, *op. cit.*, p. 119.

¹⁰Ibid., p. 120.

the economy. In such a situation capital equipment will have to grow at a much faster rate to equip labour with increasing productivity. Technological progress is thus inevitable.

10. Effects of Increasing Population on Capital Formation. Nurkse fails to analyse the effects of rising population on capital accumulation. A rapidly growing population aggravates the difficulty of increasing the rate of capital formation in two ways: (i) there is a continuous addition to the 'unproductive' labour force which eats up whatever saving potential is created by shifting 'the disguised unemployed to the new capital projects; and (ii) this population' growth outstrips capital accumulation showing thereby that "disguised unemployment grows faster than can be absorbed productively by the very stock of capital that the disguised unemployed are supposed to help expand."¹¹

11. Not Applicable to Directly Productive Activities. Hirschman makes a distinction between 'permissive' and 'compulsive' factors in economic development. According to Nurkse, it is by employing the 'unproductive' workers in social overhead capital projects that capital formation will take place. But Hirschman is of the view that though social overhead capital is fundamental to economic development, yet it is only a 'permissive' factor for it simply permits private investment to go ahead. The existence of 'directively productivity activity,' on the other hand, is a 'compulsive' factor in economic development. It includes, among others, machine tools and iron and steel industries. He, therefore, contends that Nurkse's concept of converting the rural surplus labour into capital formation can have relevance only with regard to social overhead capital but not to directly productivity activities which are more significant from the viewpoint of economic development.¹²

12. Fall in Production. Schultz does not agree with Nurkse that the removal of surplus labour force from the farms to the new capital projects will not reduce agricultural productivity. He contends that there is "no evidence for any poor country anywhere that would suggest that a transfer of even some small fraction, say, 5 per cent of the existing labour force out of agriculture, with other things equal, could be made without reducing its production."¹³ As Doreen Warriner has pointed out, the emphasis on overpopulation or disguised unemployment is most unfortunate because it concentrates on pure guesswork and diverts attention away from the ascertainable facts—the fall in output per head

¹¹Ibid

¹²A. O. Hirschman, *The Strategy of Economic Development*, 1958

¹³'The Role of Government in Promoting Economic Development' in *The State of Social Sciences*, (ed.) White, L.D.

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¹¹Ibid

¹²A O Hirschman, *The Strategy of Economic Development*, 1958.

¹³'The Role of Government in Promoting Economic Development' in *The State of Social Sciences*, (ed.) White, L D

resulting from pressure of population on the means of subsistence and the destruction of soil fertility.¹⁴

13. Defective Empirical Evidence. Empirical evidence has shown that the estimates of 20-25 per cent of surplus labour are entirely inadequate and defective. Kao, Anschel and Eicher have shown that the empirical studies supporting such optimistic estimates of disguised unemployment were often poorly conceived. In addition, by considering temporary rather than permanent labour transfers and by allowing some reorganisation of production, various writers have arrived at a high percentage of disguised unemployment. To date, there is little reliable empirical evidence to support the existence of more than 5 per cent disguised unemployment in underdeveloped countries.¹⁵

Conclusion. The inference can be drawn from the entire discussion that the existence of disguised unemployment as a concealed saving potential and hence as a source of capital formation in overpopulated underdeveloped countries is beset with a number of difficulties and has little practicability in countries that have wedded themselves to a democratic way of living. We may thus conclude with Viner that "there is little or nothing in all the phenomena designated as 'disguised unemployment,' as 'hidden unemployment,' or as 'underemployment' which in so far as they constitute genuine social problems would not be adequately taken into account by competent, informed, and comprehensive analysis of the phenomenon of low productivity of employed labour, its causes, its true extent, and its possible remedies."¹⁶

A Realistic View

The views expressed above are by those who are sceptical about the concept. But it cannot be denied that the use of surplus labour as the source of capital formation "brings within a narrow time-horizon projects which were outside this horizon. It gives scale economies, enlarges land, capital and employment and raises productivities all round." So far as the problem of wage payment is concerned Prof. Khusro suggests three methods: (i) Underemployed workers can be organized on their own and on their neighbours' farms on mutual aid on capital building. They need not be given a wage. They eat the same food at their own kitchens. As a result, there are no inflationary pressures on food prices. (ii) Underemployed workers can be organized to work on capital construction within a village outside their own farms. They are given a wage. But they return to their kitchens daily to eat the same

¹⁴D. Warriner, *Land Reform and Economic Development*, 1955.

¹⁵C.K. Eicher and L.W. Witt (eds.), *Agriculture in Economic Development*, 1964.

¹⁶'Some Reflections on the Concept of Disguised Unemployment', *IIE*.

food which they would have eaten any way. They spend their wages on non-food items whose prices rise. But with a time-lag, they would produce the capital which would produce the extra food which will pay for the 'wage-goods.' (iii) Underemployed workers can be organized to work on capital projects away from their villages and paid a wage. They would spend their wages on food and this will lead to inflationary pressures. "But eventually it produces the capital which produces the food which pays for the wage. The problem in all the three cases is. (a) of organization, and (b) of bridging the gap between work (wage payment) and product. If these programmes are undertaken on a nation-wide basis, monetary-fiscal measures become necessary."¹⁷ According to Khusro, the essence of the matter is organization in the field and taking up of projects with due regard to efficiency.

¹⁷A. M. Khusro, *Readings in Agricultural Development*, 1968

Chapter 16

LEWIS' THEORY OF UNLIMITED SUPPLIES OF LABOUR

THE LEWIS THEORY

Two Sector Economy. Professor W. Arthur Lewis has developed a very systematic theory of *Economic Development with Unlimited Supplies of Labour*.¹ Like the classical economists, he believes that in many underdeveloped countries an unlimited supply of labour is available at a subsistence wage. Economic development takes place when capital accumulates as a result of the withdrawal of surplus labour from the "subsistence" sector to the "capitalist" sector. The capitalist sector is "that part of the economy which uses reproducible capital and pays capitalists for the use thereof." It employs labour for wages in mines, factories, and plantations for earning profits. The subsistence sector is that part of the economy which does not use reproducible capital. In this sector, output per head is lower than in the capitalist sector.

Lewis starts his theory with the assertion that the classical theory of perfectly elastic supply of labour at a subsistence wage holds true in the case of a number of underdeveloped countries. Such economies are over-populated relatively to capital and natural resources so that the marginal productivity of labour is negligible, zero or even negative. Since the supply of labour is unlimited, new industries can be established or existing industries expanded without limit at the current wage by drawing upon labour from the subsistence sector. The current wage is what labour earns in the subsistence sector, i.e., the subsistence wage. The main sources from which workers would be coming for employment at the subsistence wage as economic development proceeds are "the farmers, the casuals, the petty traders, the retainers (domestic and commercial), women in the household and population growth." But the capitalist sector also needs skilled workers. Lewis argues that skilled labour is only a "quasi bottleneck," a temporary bottleneck—which can

¹This is the title of an article published by W.A. Lewis in the *Manchester School*, May 1954. Reprinted in Aggrawal and Singh, *op. cit.*, pp. 400-449. Also "Unlimited Labour" Further Notes. *The Manchester School*, January 1958.

be removed by providing training facilities to unskilled workers.

Capitalist Surplus. Now the question is what determines the subsistence wage at which the surplus labour is available for employment in the capitalist sector? It depends upon the minimum earnings required for subsistence. To be precise, the wage level cannot be less than the average product of the worker in the subsistence sector. It may, however, be higher than this, if the farmers are to pay rent or food costs more or if they feel that psychic disutilities of leaving home are large. Though "earnings in the subsistence sector set a floor to wage in the capitalists sector," yet in practice capitalist wages are more than 30 per cent² higher than subsistence wages due to:

- (a) a substantial increase in the output of the subsistence sector which by raising real income might induce workers to ask for a higher capitalist wage before offering themselves for employment;
- (b) if with the withdrawal of labour from the subsistence sector total product remains the same, the average product and hence the real income of those remaining behind will rise and the withdrawn workers might insist on a higher wage in the capitalist sector;
- (c) the high cost of living and some humanitarian consideration may move the employers to raise the real wage, or governments may encourage trade unions and support their wage-bargaining efforts.

The supply of labour is, however, considered to be perfectly elastic at the existing capitalist wage.

Capital Formation Depends on Capitalist Surplus. Capitalists aim at profit maximisation. It is they who save and automatically invest what they save. Since the marginal productivity of labour in the capitalist

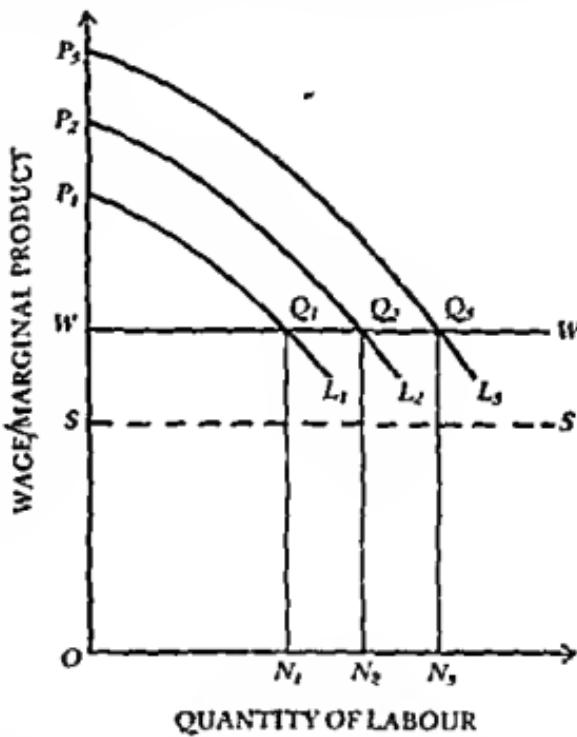


FIG. 16.1

²In the 1958 article, Lewis estimated a gap of 50 per cent. In fact, the size of this margin cannot be precisely stated and will vary with local circumstances

sector is higher than the capitalist wage, this results in capitalist surplus. This surplus is reinvested in new capital assets. Capital formation takes place and more people are employed from the subsistence sector. This process continues till the capital-labour ratio rises and the supply of labour becomes inelastic and the surplus labour disappears. Thus capital formation depends on the capitalist surplus. The Lewis theory can be explained with the help of the Fig. 16.1. The horizontal axis measures the quantity of labour employed and the vertical axis, its wage and marginal product. OS represents average subsistence wage in the subsistence sector, and OW the capitalist wage. At OW wage in the capitalist sector, the supply of labour is unlimited, as shown by the horizontal supply curve of labour WW . In the beginning, when ON_1 labour is employed in the capitalist sector, its marginal productivity curve is P_1L_1 and the total output of this sector is $OP_1Q_1N_1$. Out of this, workers are paid wages equal to the area OWQ_1N_1 . The remaining area WP_1Q_1 shows surplus output. This is the capitalist surplus or total profit earned by the capitalist sector. When this surplus is reinvested, the curve of marginal productivity shifts upwards to P_2L_2 . The capitalist surplus and employment are now larger than before being WP_2Q_2 and ON_2 respectively. Further reinvestments raise the marginal productivity curve and the level of employment to P_3L_3 and ON_3 and so on, till the entire surplus labour is absorbed in the capitalist sector. After this, the supply curve WW will slope from left to right upwards like an ordinary supply curve, and wages and employment will continue to rise with development.

Thus, capital is formed out of profits earned by the capitalists. According to Lewis, if technical progress is capital-saving, it may be considered as an increment in capital, and if it is labour-saving, it may be considered as an increment in the marginal productivity of labour. As such, he does not make any distinction between the growth of technical knowledge and the growth of productive capital and treats them as a "single phenomenon" with the result that technical progress tends to raise profits and increase employment in the capitalist sector.

Role of the State and Private Capitalists. "The central problem in the theory of economic development," according to Lewis, "is to understand the process by which a community which was previously saving and investing 4 or 5 per cent of its national income or less converts itself into an economy where voluntary saving is running at about 12 to 15 per cent of national income or more. This is the central problem because the central fact of economic development is rapid capital accumulation (including knowledge and skills with capital)." In underdeveloped countries with surplus labour, only 10 per cent of the people with the largest income save who receive about 40 per cent of the national

income. The wage and salary classes hardly save 3 per cent of the national income. But the dominant classes consisting of landlords, traders, moneylenders, priests, soldiers, princes are engaged in prodigal consumption rather than in productive investments. It is, therefore, the state capitalist and indigenous private capitalists who create capital out of profits earned. "The indigenous private capitalist is bound up with the emergence of new opportunities, especially something that widens the market, associated with some new technique which greatly increases the productivity of labour, and hence the capitalist surplus. The state capitalist, on the other hand, can accumulate capital even faster than the private capitalist, since he can use for this purpose not only the profits of the capitalist sector, but also what he can force or tax out of the subsistence sector." Thus, once a capitalist sector has emerged it is only a matter of time before it becomes sizable. If the opportunities for using capital productivity increase rapidly, the surplus will also grow rapidly, and the capitalist class with it.

Capital Formation through Bank Credit. But capital is created not only out of profits, it is also created out of bank credit. In an underdeveloped economy which has abundant idle resources and shortage of capital, credit creation has the same effect on capital formation as profits. It will raise output and employment. Credit-financed capital formation, however, leads to inflationary rise in prices for some time. When the surplus labour is engaged in the capitalist sector and paid out of created money, prices rise because income increases while consumer-goods output remains constant. This is only a temporary phenomenon, for as soon as capital goods start producing consumption goods, prices start falling. In the words of Lewis, "Inflation for the purpose of capital formation is a very different kettle of fish. It is self-destructive. Prices begin to rise but are sooner or later overtaken by rising output, and may, in the last stage, end up lower than they were at the beginning." The inflationary process also comes to an end "when voluntary savings increase to a level where they are equal to the inflated level of investment." As capital formation is taking place all the time, output and employment rise continuously and so do profits. Since higher profits lead to higher savings, a time will come when savings increase so much that new investments can be financed without recourse to bank credit.

This analysis also applies to the government which receives back the inflation financed money in the form of taxes. Secondly, when native income increases with rising output, it is not required to resort to direct financing. Given abundant labour and scarce physical resources, the effect of capital formation either through taxation or credit will have the same on output. Since backward economies are faced

supplies of labour, the Lewis theory is primarily concerned with this problem.

End of the Growth Process. The theory shows that "if unlimited supplies of labour are available at a constant real wage, and if any part of profits is reinvested in productive capacity, profits will grow continuously relatively to the national income and capital formation will also grow relatively to national income." But the process of growth cannot go on indefinitely, if as a result of capital accumulation no surplus labour is left. It may also stop if, despite the existence of surplus labour, real wages rise so high as to reduce the capitalist profits to the level where they are all consumed and nothing is left for net investment. This may happen in any one of the four ways: (a) if the capitalist sector expands so rapidly that it reduces absolutely the population in the subsistence sector, the average productivity of labour rises in the latter sector because there are very few people to share the product and so the capitalist wage rises in the former sector (in the diagram SS and WW will shift upwards and reduce profits); (b) if as a result of the expansion of the capitalist sector relatively to the subsistence sector, the terms of trade turn against the former with rising prices of raw materials and food, the capitalists will have to pay higher wages to the workers; (c) if the subsistence sector adopts new techniques of production, real wages would rise in the capitalist sector and so reduce the capitalist surplus; and *lastly*, if the workers in the capitalist sector imitate the capitalist way of life; and agitate for higher wages and if successful in raising their wages, the capitalist surplus and the rate of capital formation will be reduced.

In Open Economy. When capital accumulation is adversely affected by any of these factors, it can continue by encouraging mass immigration or by exporting capital to such countries as possess abundant labour at subsistence wage. Both these possibilities are, however, ruled out by Lewis himself. *First*, mass immigration of unskilled labour is not possible because trade unions in the high-wage countries oppose it. They fear that labour imports would bring down wages to the subsistence level of the poorest country. *Second*, the effect of capital exports is to reduce the creation of fixed capital at home and hence to reduce the demand for labour and wages in the capital-exporting country. But the reduction in wages is offset if capital exports cheapen the things which workers import because their real wages will rise. On the other hand, the reduction in wages is further encouraged if capital exports raise the cost of imported things as the real wages of workers will fall. So the effect of capital exports cannot be assessed with definiteness.

A Critical Appraisal

The Lewis theory is applicable to overpopulated underdeveloped countries under certain set conditions. Its applicability is, therefore, circumscribed by its assumptions which are the bases of criticisms discussed below:

1. Wage Rate not Constant In the Capitalist Sector. The theory assumes a constant wage rate in the capitalist sector until the supply of labour is exhausted from the subsistence sector. This is unrealistic because the wage rate continues to rise over time in the industrial sector of an underdeveloped economy even when there is open unemployment in its rural sector.

2. Not Applicable if Capital Accumulation Is Labour Saving. Lewis assumes that the capitalist surplus is reinvested in productive capital.

But according to Reynolds,³ if the productive capital happens to be labour saving, it would not absorb labour and the theory breaks down. This is shown in Fig. 16.2 where the curve P_2L_2 has a greater negative slope than the curve P_1L_1 , thereby showing labour-saving technique. With the shifting of the marginal productivity curve upwards from P_1L_1 to P_2L_2 , the total output has risen substantially from $OP_1Q_1N_1$ to $OP_2Q_2N_1$. But the total wage bill OWQ_1N_1 and the labour employed ON_1 remain unchanged.

3. Skilled Labour not a Temporary Bottleneck. Given an unlimited supply of labour, Lewis assumes the existence of unskilled labour for his theory. Skilled labour is regarded as a temporary bottleneck which can be removed by providing training facilities to unskilled labour. No doubt skilled labour is in short supply in underdeveloped countries but skill-formation poses a serious problem, as it takes a very long time to educate and train the multitudes in such countries.

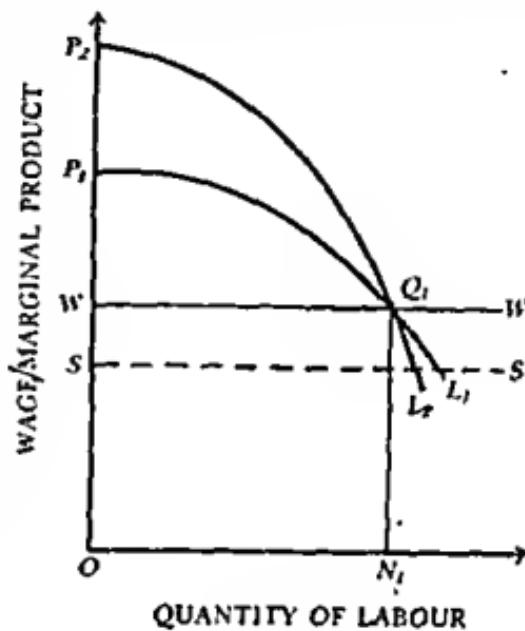


FIG. 16.2

³Lloyd G. Reynolds, "Wages and Employment in a Labour-Surplus Econ A E.R., September 1956

4. Lack of Enterprise and Initiative. The Lewis theory is based on the assumption that a capitalist class exists in underdeveloped countries. In fact, the entire process of growth depends on the existence of such a class which has the necessary skill to accumulate capital. In reality, such countries lack capitalists with necessary enterprise and initiative.

5. Multiplier Process does not Operate in LDC. Again, the theory assumes that capital accumulation takes place when the capitalist class continues to reinvest profits. It, therefore, presupposes the operation of the "investment multiplier" which is not applicable to underdeveloped countries.⁴ For if profits are reduced somehow or the prices of wage goods rise, the process of capital formation will stop before all the surplus labour is absorbed.

6. One sided Theory. This is a one-sided theory because Lewis does not consider the possibility of progress in the agricultural sector. As the industrial sector develops with the transfer of surplus labour, the demand for food and raw materials will rise which will, in turn, lead to the growth of the agricultural sector.

7. Neglects Total Demand. Lewis does not study the problem of aggregate demand. He assumes that whatever is produced in the capitalist sector is either consumed by itself or is exported. He does not even analyse the possibility of the capitalist sector selling its products to the subsistence sector. In case, it so happens, the growth process may come to a halt much earlier through unfavourable terms of trade or the subsistence sector adopting new techniques of production to meet the expanding raw material demand of the capitalist sector.

8. Mobility of Labour not so Easy. Higher capitalist wage will not lead to the movement of surplus labour from the subsistence sector to the capitalist sector. People are so intensely attached to their family and land that they do not like to leave their kith and kin. Moreover, differences in language and custom, the problems of congestion, housing and high cost of living in the capitalist sector stand in the way of mobility of labour to this sector. This is the main weakness of the theory.

9. Marginal Productivity of Labour not Zero. Schultz does not agree that the marginal productivity of labour in overpopulated underdeveloped countries is zero or negligible. If it were so, the subsistence wage would also be zero. The fact is that every worker receives the subsistence wage, may be in kind, if not in cash. It is, therefore, difficult to find out the exact number of surplus labourers who are to move to the capitalist sector, their number hardly exceeding 5 per cent, as is now generally accepted.

⁴See Chapter on "Keynesian Theory of Development."

10. **Productivity falls with Migration of Labour from the Subsistence Sector.** Lewis assumes that when the surplus labour is withdrawn from the subsistence sector to the capitalist sector, the agricultural production remains unaffected in the subsistence sector. But the fact is that withdrawal of workers from the farms will reduce output. As pointed out by Schultz, "there is no evidence for any poor country anywhere that would suggest that a transfer of even some fraction, say, 5 per cent of the existing labour-force out of agriculture, with other things equal, could be made without reducing its production."

11. **Low Income Groups also Save.** It is not correct to say that only 10 per cent of the people with the largest income save. In fact, people with low incomes also save due to social reasons and even small farmers save for capital accumulation in underdeveloped countries, whereas high income groups save less because they spend more under the influence of the demonstration effect.

12. **Inflation not Self-Destructive.** Lewis's view that inflation for the purpose of capital formation is self-destructive is difficult to believe in the face of acute shortage of consumer goods. Production of consumer goods fails to increase rapidly due to structural rigidities. On the other hand, the marginal propensity to consume of the people is near unity, so that all increases in income lead to inflationary rise in prices.

13. **Inefficient Tax Administration.** Lewis's contention that taxation will mop up increasing income cannot be accepted because the tax administration in underdeveloped countries is not so efficient and developed as to collect taxes sufficient enough for capital accumulation.

Conclusion. Despite these limitations, the Lewis theory has the merit of explaining in a very clear cut way the process of development. This two sector theory has great analytical value. It explains how low capital formation takes place in underdeveloped countries which have plethora of labour and scarcity of capital. His study of the problems of credit inflation, population growth, technological progress, and international trade gives the theory a touch of realism.

Chapter 17

FEI-RANIS THEORY

INTRODUCTION

John Fei and Gustav Ranis in an article entitled "A Theory of Economic Development" analyse "the transition process through which an underdeveloped economy hopes to move from a condition of stagnation to one of self-sustained growth." Their theory is an improvement over Lewis's theory of Unlimited Supplies of Labour because Lewis failed to present a satisfactory analysis of the growth of the agricultural sector.

The analysis that follows is based on the original article and the subsequent modifications¹ made by the authors in their theory of the development of a dual economy.

THE THEORY

The theory relates to an underdeveloped labour-surplus and resource-poor economy in which the vast majority on the population is engaged in agriculture amidst widespread unemployment and high rates of population growth. The agrarian economy is stagnant. People are engaged in traditional agricultural pursuits. Non-agricultural pursuits exist but they are characterised by a modest use of capital. There is also an active and dynamic industrial sector. Development consists of the re-allocation of surplus agricultural workers, whose contribution to output is zero or negligible, to the industrial sector where they become productive at a wage equal to the institutional wage in agriculture.²

Assumptions

In presenting their theory of economic development, Fei and Ranis make the following assumptions:

1. There is a dual economy divided into a traditional and stagnant agricultural sector and an active industrial sector.

¹John C.H. Fei and Gustav Ranis, "A Theory of Economic Development," AER, Vol. 51, September 1961; *Development of Labour Surplus Economy*, 1964; and "Agrarianism, Dualism and Economic Development," in *The Theory and Design of Economic Development* (eds.) I. Adelman and F. Thorbecke, 1966.

²Before starting this model, students should first read the Lewis Model in the previous chapter.

2. The output of the agricultural sector is a function of land and labour alone.
3. There is no accumulation of capital in agriculture except in the form of land reclamation.
4. Land is fixed in supply.
5. Agricultural activity is characterised by constant returns to scale with labour as a variable factor.
6. It is assumed that the marginal productivity of labour becomes zero at some point. If population exceeds the quantity at which the marginal productivity of labour becomes zero, labour can be transferred to the industrial sector without loss in agricultural output.
7. The output of the industrial sector is a function of capital and labour alone. Land has no role as a factor of production.
8. Population growth is taken as an exogenous phenomenon.
9. The real wage in the industrial sector remains fixed and is equal to the initial level of real income in the agricultural sector. They call it the institutional wage.
10. Workers in either sector consume only agricultural products.

Given these assumptions, Fei and Ranis analyse the development of a labour-surplus economy into three phases. In the first phase, the disguised unemployed workers, who are not adding to agricultural output, are transferred to the industrial sector at the constant institutional wage. In the second phase, agricultural workers add to agricultural output but produce less than the institutional wage they get. Such workers are also shifted to the industrial sector. If the migration of workers to the industrial sector continues, a point is eventually reached when farm workers produce output equal to the institutional wage. This begins the third phase which marks the end of the take-off and the beginning of the self-sustained growth when farm workers produce more than the institutional wage they get. In this phase, the surplus labour is exhausted and the agricultural sector becomes commercialised.

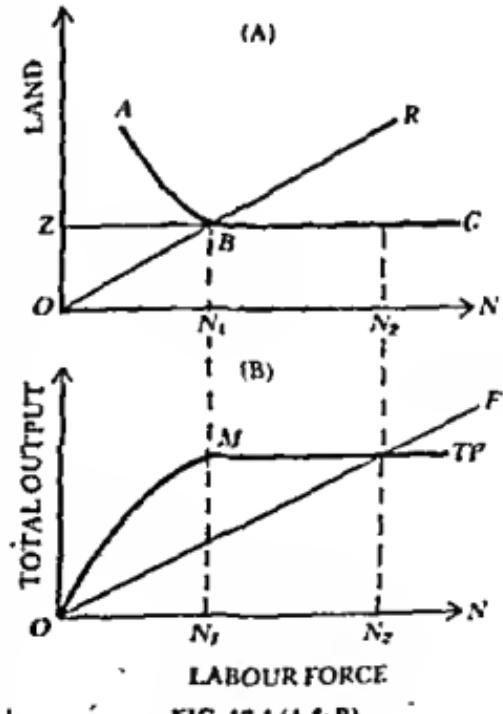


FIG. 17.1 (A & B)

Figure 17.1 (A) shows the functioning of

sector where agricultural goods are produced by the application of labour (L) and land (Z). Labour is measured on the horizontal axis and land on the vertical axis. The ray OR shows the stage of production. The curve ABC is the production contour of agricultural goods. Assuming land to be fixed at OZ , labour ON_1 produces the maximum output. The total productivity of labour is represented by the TP curve in Figure 17.1 (B). If more labour is employed beyond N_1 with land OZ ,

production would not increase. This is because the total productivity of labour becomes constant beyond point M on the TP curve. Assuming that ON_2 is the total labour force engaged in agriculture, ON_1 is the non-redundant labour and N_1N_2 is the redundant labour force. N_1N_2 number of workers do not make any positive contribution to output and their marginal physical productivity approaches zero beyond point M on the TP curve. Such workers are disguised unemployed:

Economic development takes place when these workers are shifted from the agricultural sector to the industrial sector in three phases. This is illustrated in Figure 17.2(A), (B) and (C) where Panel (A) depicts the industrial sector and panels (B) and (C) the agricultural sector.

Let us take Panel (C) where the labour force in the agricultural sector is

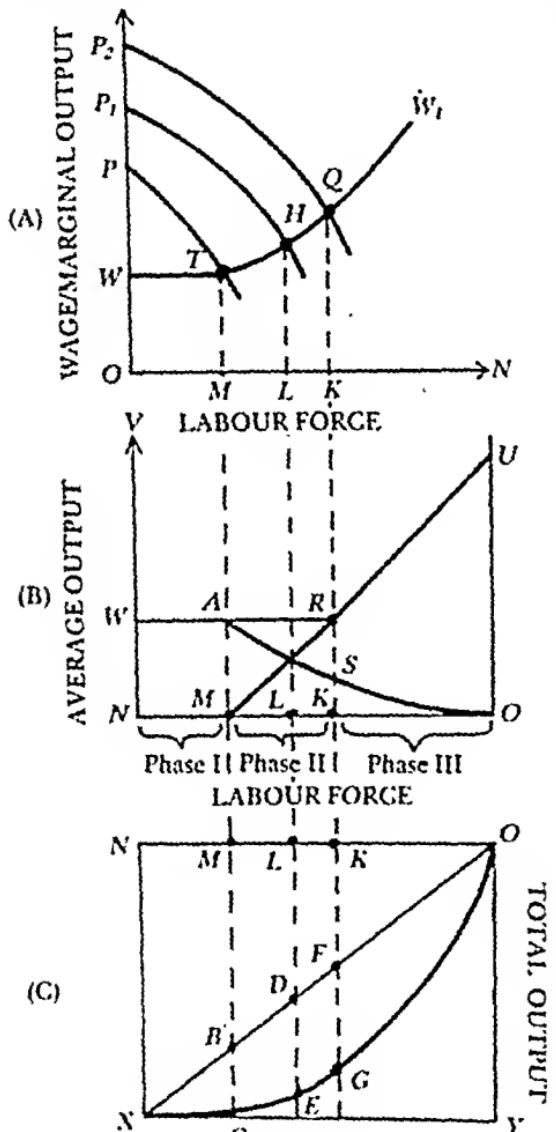


FIG. 17.2 (A,B & C)

measured from right to left on the horizontal axis ON and agricultural output downward from O on the vertical axis OY . The curve OCX is the

total physical productivity curve (TPP)³ of the agricultural sector. The horizontal portion *CX* of the curve shows that the total productivity is constant in this region so that the marginal productivity of *MN* labour is zero. Thus *MN* labour is surplus and its withdrawal to the industrial sector will not affect agricultural output. If, however, it is presumed that the entire labour force *ON* is engaged in the agricultural sector, it produces *NX* total agricultural output. Assuming that the entire output *NX* is consumed by the total labour force *ON*, the real wage is equal to *NX/ON* or the slope of the ray *OX*. This is the institutional wage.

The allocation process in three phases during the take-off is depicted in Panel (B) of the Figure 17.2 where the total labour force is measured from right to left on the horizontal axis *ON* and the average output on the vertical axis *NV*. The curve *NMRU* represents the marginal physical productivity of labour (MPP) in the agricultural sector. *NW* is the institutional wage at which the workers are employed in this sector.

In Phase I, *NM* workers are disguised unemployed. Their marginal physical productivity is zero, as shown by *NM* portion of the MPP curve in Panel (B) or *CX* portion of the TPP curve of Panel (C). This redundant labour force *NM* is transferred to the industrial sector shown as *OM* in Panel (A) at the same institutional wage *OW*(=*NW*).

In Phase II, the MPP of agricultural workers *MK* is positive in the range *MR* on the MPP curve *NMRU* but is less than the institutional wage *KR*(=*NW*), they get as shown in Panel (B). So they are also disguised unemployed to some extent and are shifted to the industrial sector. But the nominal wage in the industrial sector will not equal the institutional wage in this phase. This is because agricultural output declines with the transfer of labour to the industrial sector. As a result, there is a shortage of agricultural commodities leading to rise in their prices relative to industrial goods. This leads to the worsening of the terms for the industrial sector, thereby requiring a rise in the nominal wage in the industrial sector. The nominal wage rises above the institutional wage *OW* to *LH* and *KQ*. This is shown by the upward movement of the supply curve of labour from *WT* to *H* and *Q*, as *ML* and *LK* labour gradually shifts to the industrial sector in Panel (A). The movement on the supply curve of labour *WTW*, from *T* upward is "the Lewis turning point."

When Phase III begins, agricultural workers start producing agricultural output equal to the institutional wage and ultimately more than the institutional wage they get. This marks the end of the take-off and the beginning of the self-sustained growth. This is shown by the rising portion *RU* of the MPP curve in Panel (B) which is higher than the institutional wage *KR*(=*NW*). Consequently, *KO* of labour will be

³It is the inverted OTP curve of Figure 17.1(B)

shifted from the agricultural sector to the industrial sector at a rising nominal wage above KQ in Panel (A) of the figure. This leads to the exhaustion of the surplus labour in the agricultural sector which becomes fully commercialised. According to Fei and Ranis, "The 'exhaustion of the labour surplus' must be interpreted primarily as a market phenomenon rather than as a physical shortage of manpower, it is indicated by an increase in the real wage at the source of supply."

Fei and Ranis point out that as agricultural workers are shifted to the industrial sector, there begins a surplus of agricultural commodities. This leads to the total agricultural surplus (or TAS) in the agricultural sector. The excess portion of total agricultural output over the consumption requirement of the agricultural labour force at the institutional wage is the TAS. The amount of TAS is a function of the number of workers shifted to the industrial sector in each phase of the development process. The TAS is measured in Panel (C) of the figure by the vertical distance between the line OX and the TPP curve OCX . In Phase I when NM labour is transferred, the TAS is BC . In phase II, as ML and LK workers are shifted to the industrial sector, DE and FG amounts of TAS arise. "TAS may be viewed as agricultural resources released to the market through the re-allocation of agricultural workers. Such resources can be siphoned off by means of the investment activities of the landlord class and/or government tax policy and can be utilised in support of the new industrial arrivals."

There is also the average agricultural surplus (or AAS). The AAS is the total agricultural surplus available per head to workers allocated to the industrial sector. It is as if each allocated workers carries his own subsistence bundle along with him. The AAS curve is depicted as $WASO$ curve in Panel (B) of the figure. In Phase I, the AAS curve coincides with the institutional wage curve WA . In Phase II, when MK workers are transferred to the industrial sector, the AAS begins to fall from A to S in Panel (B) while TAS is still rising from BC to DE to FG in Panel (C).

In Phase III, AAS declines more rapidly from S to O in Panel (B) and TAS also declines as shown by the narrowing of the area from FG toward O in Panel (C) below Phase III of Panel (B). The decline in both AAS and TAS is due to the rise in the MPP of agricultural workers by more than the institutional wage which ultimately leads to the transfer of the remaining surplus labour to the industrial sector.

Fei and Ranis call the boundary between Phases I and II as the "shortage point" when shortages of agricultural goods begin as indicated by the fall of the AAS (the portion AS of $WASO$ curve) below the minimum institutional wage (NW). And the boundary between phase II and III as the "commercialisation point" which signifies the

beginning of equality between MPP and the institutional wage in agriculture. Thus the Lewis turning point coincides with the shortage point of Fei and Ranis, and the increase in the industrial wage is speeded up at the commercialisation point.

They show that if agricultural productivity is increasing, the shortage point and the commercialisation point coincide. This is because with the increase in agricultural productivity the rise in MPP enables the output to rise to the level of the institutional wage more quickly. It may be viewed as the shifting of MRU curve upward to the left in Figure 17.2(B). On the other hand, the AAS increases with the increase in total physical productivity. This means that the ASO curve in Figure 17.2(B) shifts upward to the right. If the rise in productivity is sufficient, the MRU and ASO curves in Figure 17.2(B) will so shift upward that the shortage point *A* and the commercialisation point *R* coincide and Phase II is eliminated. So far as the industrial sector is concerned, the increase in agricultural productivity has the effect of raising the industrial supply curve after the turning point. This can be viewed as the shifting of the WTW curve downward to the right below point *T* in Figure 17.2(A). According to Fei and Ranis, "The economic significance of the equality between our turning point and the commercialisation point is that, after the turning point, the industrial supply curve of labour finally rises as we enter a world in which the agricultural sector is no longer dominated by non-market institutional forces but assumes the characteristics of a commercialised capitalist system." In other words, the economic significance of the elimination of the second phase is that it enables the economy to move smoothly into self-sustained growth.

Balanced Growth. Fei and Ranis have further shown that their model satisfies the conditions of balanced growth during the take-off process.

Balanced growth requires simultaneous investment in both the agricultural and industrial sectors of the economy. This is illustrated in Figure 17.3 where *PP* is the initial demand curve for labour and *S₁S₁* the initial supply curve of labour. They intersect at *a* where *OM* labour force is employed in the industrial sector. At this level of employment, the industrial sector is getting a profit equal to the area *S₁Pa*. This profit is the total investment fund available to the economy during the process. A part of this fund is allocated to the agricultural sector

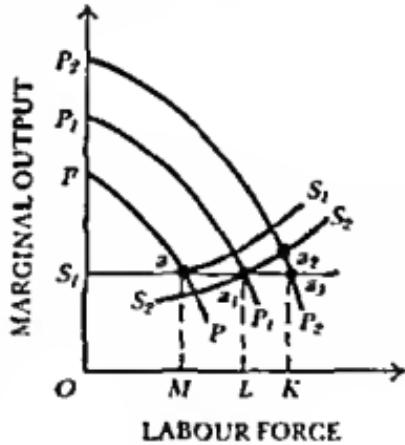


FIG 17.3

raising agricultural productivity and shifting the supply curve of labour in the industrial sector downward to the right from S_1S_1 to S_2S_2 . The remaining part of the investment fund is allocated to the industrial sector, thereby shifting the industrial demand curve upward to the right from PP to P_1P_1 . The S_2S_2 and P_1P_1 curves intersect at a' lying on the balanced growth path S_1a_3 . At a' the industrial sector absorbs ML labour force which has been released by the agricultural sector as a result of rise in agricultural productivity following the allocation of investment fund to it. In Fig. 17.3, ML labour force absorbed in the industrial sector exactly equals the labour force ML released from the agricultural sector in Figure 17.2(B).

Thus as investment funds are continued to be allocated to both sectors through time, the economy will move on the balanced-growth path. But there is every likelihood for the actual growth path to deviate from the balanced-growth path from time to time. "Such a deviation, however, will call into play countervailing equilibrating forces which tend to bring it back to the balanced-growth path. The actual path is, in fact, likely to be oscillating around the balanced-growth path." For example, if as a result of overinvestment in the industrial sector, the demand curve for labour shifts to P_2P_2 and intersects the supply curve of labour S_2S_2 at a_2 , the actual growth path will be above the balanced-growth path. This will lead to a shortage of agricultural goods, to a deterioration of the terms of trade of the industrial sector and to a rise in the wage rate in this sector. This will discourage investment in the industrial sector and encourage investment in the agricultural sector and thereby bring the actual path to the level of the balanced-growth path a_3 .

A Critical Appraisal

The Fei-Ranis model is an improvement over the Lewis model. The Lewis model ignores the development of the agricultural sector and concentrates exclusively on the industrial sector. The Fei-Ranis model shows the interaction between the two sectors in initiating and accelerating development. Moreover, its explanation of the Lewis turning point is more realistic. But the major merit of the theory is that it shows the importance of agricultural products in capital accumulation in underdeveloped countries.

Despite these merits, the model is not free from criticisms which are discussed below.

- Supply of Land not Fixed.** Fei and Ranis begin with the assumption that the supply of land is fixed during the development process. In the long run, the amount of land is not fixed, as the statistics of crop acreage in many Asian countries reveal. For instance, the index number of area

under crops (base 1961-62) in India rose from 82 in 1950-51 to 107.3 in 1970-71.

2. Institutional Wage not above the MPP. The model is based on the assumption of a constant institutional wage which is above the MPP during phases I and II of the development process. There is no empirical evidence to support this assumption. In fact, in labour surplus underdeveloped countries, wages paid to the agricultural workers are much below their MPP.

3. Institutional Wage not Constant in the Agricultural Sector. The theory assumes that the institutional wage remains constant in the first two phases even when agricultural productivity increases. This is highly unrealistic because with a general rise in agricultural productivity, farm wages also tend to rise. For instance, the daily real wage rates (at 1966 prices) of agricultural workers for various farm operations in Punjab during the period of the green revolution (1967-72) increased by 41.7 per cent to 55.2 per cent.⁴

4. Closed Model. According Fei and Ranis, the terms of trade move against the industrial sector in the second phase when agricultural output declines and prices of agricultural commodities rise. This analysis is based on the assumption of a closed economy where foreign trade does not exist. But this assumption is unrealistic because underdeveloped countries are not close but open economies which import agricultural commodities when shortages arise.

5. Commercialisation of Agriculture Leads to Inflation. According to the theory, when the agricultural sector enters the third phase, it becomes commercialised. But the economy is not likely to move smoothly into self-sustained growth because inflationary pressures will start. When many workers shift to the industrial sector, the agricultural sector will experience shortage of labour. In the meantime, the institutional wage also equals the MPP of workers and the shortages of agricultural products arise. All these factors will tend to create inflationary pressures within the economy.

6. MPP not Zero. Fei and Ranis observe that "with a fixed amount of land, there will be some size of population which is large enough to render MPP zero." But Schultz does not agree that in labour-surplus economies the MPP is zero. According to him, if it were so, the institutional wage would also be zero. The fact is that every worker receives a minimum wage, may be in kind, if not in cash. Thus it is wrong to say that the MPP is zero in the agricultural sector.

⁴M L Jhingan, "Surpluses Pertaining since the Green Revolution and their contribution to Industrialisation—A Study of Punjab" IIAE, Conference Number, July-September 1979

Conclusion. However, these limitations do not undermine the importance of the Fei-Ranis model for the economic development of labour-surplus countries. It systematically analyses the development process from the take-off to self-sustained growth through the interaction of the agricultural and industrial sectors of an underdeveloped economy.

Chapter 18

LEIBENSTEIN'S CRITICAL MINIMUM EFFORT THESIS

LEIBENSTEIN'S THEORY¹

Harvey Leibenstein has developed the thesis that underdeveloped countries are characterized by the vicious circle of poverty that keeps them around a low income per capita equilibrium state. The way out of this impasse is a certain "critical minimum effort" which would raise the per capita income to a level at which sustained development could be maintained. In order to achieve the transition from the state of backwardness to the more developed state where we can expect steady secular growth it is a necessary, though not always sufficient, condition that at some point, or during some period, the economy should receive a stimulus to growth that is greater than a certain critical minimum size."

According to Leibenstein, every economy is subject to "shocks" and "stimulants". A shock has the impact of reducing per capita income initially; while a stimulant tends to increase it. Certain countries are underdeveloped because the magnitude of the stimulants has been small and that of shocks large therein. It is only when the income-raising factors are stimulated much beyond the income-depressing factors that the critical minimum is reached and the economy would be on the path to development.

Growth Agents. The rationale of the critical minimum effort thesis rests on the existence of certain favourable economic conditions so that the income-increasing forces expand at a rate higher than the income-depressing forces. In the development process such conditions are created by the expansion of the "growth agents". They are the quantum of capacities residing in the members of the population to carry out growth contributing activities. The typical growth agents are the entrepreneur, the investor, the saver, and the innovator. The growth-contributing activities result in the creation of entrepreneurship, the increase in the stock of knowledge, the expansion of the productive skills of the people and the increase in the rate of saving and investment.

¹Harvey Leibenstein, *Economic Backwardness and Economic Growth—Studies in the Theory of Economic Development*, 1957

Incentives. According to Leibenstein, "whether or not the growth agents expand will depend on the anticipated outcome of such activities, the actual result and on the incentives for further expansion or contraction generated by the interaction of the anticipation, the activities and the results." The incentives are of two types: (i) the zero-sum incentives which do not raise national income but have only a distributive effort; (ii) the positive-sum incentives that lead to the expansion of national income. It is apparent that only the positive-sum type of activities lead to economic development. But conditions in underdeveloped countries are such that entrepreneurs are engaged in zero-sum activities. They are the *non-trading* activities for securing a greater monopolistic position, political power and social prestige; the *trading* activities leading to a greater monopolistic position that do not add to aggregate resources; the *speculative* activities which do not utilize savings but do waste scarce entrepreneurial resources; and finally, such "activities that do use up net savings, but the investments involved are in enterprises of such nature that their social value is either zero, or their social value is very much lower than their private value. Thus, the zero-sum activities are not real income creating activities but simple transfers of liquidity from some holders to others. On the other side, the positive-sum activities which are essential for economic development have a limited scope in stagnant underdeveloped economies. Even if some entrepreneurs undertake real investment projects in anticipation of profits, their positive-sum activities will degenerate and be directed towards zero-sum activities in the absence of net growth in the economy. It is, therefore, necessary that the minimum effort should be sufficiently large to create an environment congenial to the persistence of positive-sum incentives.

But in underdeveloped economies there are certain influences averse to change that tend to depress per capita incomes. They are: (i) "the zero-sum entrepreneurial activities directed towards the maintenance of existing economic privileges through the inhibition and curtailment of potentially expanding economic opportunities; (ii) the conservative activities of both organized and unorganized labour directed against change; (iii) the resistance to new knowledge and ideas, and the simultaneous attraction of classical knowledge and old ideas; (iv) increase in essentially non-productive conspicuous public or private consumption expenditures that use resources that could otherwise be used for capital accumulation; and (v) population growth and the consequent labour force growth that has the effect, other things being equal, of diluting the amount of capital available per worker;" and lastly, a high capital-output ratio.

To overcome these influences which keep the economy in a state of

economic backwardness, a sufficiently large critical minimum effort is required to sustain a rapid rate of economic growth which should stimulate the positive-sum incentives and create forces for counteracting zero-sum activities. As a result of the critical minimum effort, the per capita income would rise and tend to increase the level of saving and investment, which in turn, would lead to: (a) an expansion of the growth agents; (b) an increase in their contribution to per unit of capital as the capital-output ratio declines; (c) a decrease in the effectiveness of factors inhibiting growth; (d) the creation of social and environmental conditions that promote social and economic mobility; (e) increased specialization and the expansion of secondary and tertiary sectors, and lastly, "the development of an atmosphere that leads to changes is more conducive to economic and social changes, and especially an environment that leads to eventual fertility decline and an eventual decline in the rate of population growth."

Leibenstein's critical minimum effort thesis is explained in Fig. 18.1 where the 45° line measures induced increases and decreases in per capita income. The curve x_1x_1 represents all the per capita income-raising forces and the curve z_1z_1 , the per capita income-depressing forces. If the stimulants raise per capita income from the equilibrium level Oe to Om , the income-raising forces, thus, generated will raise the per capita income level by na . But at this level, the income-depressing forces fb are greater than the income-raising forces af which will, therefore, generate the downward path $abcd$, until it reaches the equilibrium position E . It is only when the investment programme raises the per capita income to Ok level that the path of sustained growth starts. Thus, if the per capita income level in a period is raised to Ok , the income-raising forces generated will raise the income level to sG which will in turn generate the path of endless expansion of per capita income as shown by the arrows rising above G . Raising the per capita income to Ok level and beyond point G is the critical minimum effort case. It should be noted that Leibenstein regards the critical minimum effort as "a minimum minimum of all possible efforts that would lead to sustained real income growth" involving "an optimum time pattern of expenditure."

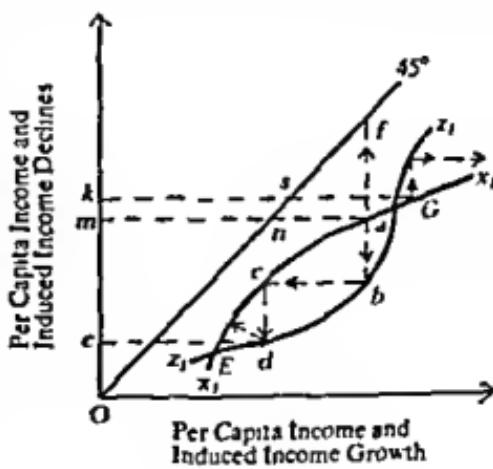


FIG. 18.1

For sustained development, it is imperative that the initial investment effort must be above a certain minimum level so as to generate a sufficiently large per capita income level in order to overcome autonomous or induced income-depressing forces.

But the critical minimum effort need not be made all at once. It would be more effective, if it is broken up into a series of smaller efforts of which the applications to the economy are optimally timed. This is illustrated in Fig.

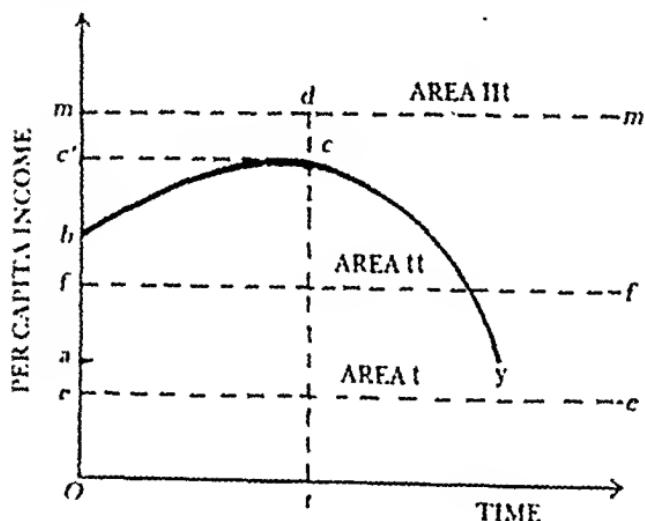


FIG. 18.2

18.2 where the line ee represents the low per capita income level and mm the critical minimum per capita income level. The gap between the two is divided into Area I and Area II. The Area III above mm is of self-sustained growth. If Oa is the per capita income to start with, the initial injection of investment would raise per capita income to Ob level. Then at time t the second injection of investment would raise per capita income by cd so that the critical minimum level mm is reached. If investment is not optimally timed, the per capita income would follow the cy path of the curve bcr toward the low equilibrium level ee .

Population Growth a Function of Per Capita Income. Leibenstein's thesis is, however, based on the empirical evidence that the rate of population growth is a function of the level of per capita income. It is closely related to the different stages of economic development. To start with, at the subsistence equilibrium level of income, fertility and mortality rates are the maximum consistent with survival rate of population. If the per capita income is raised above the subsistence equilibrium position, the mortality rate falls without any drop in the fertility rate. The result is an increase in the growth rate of population. Thus, an increase in per capita income tends to raise the growth rate of population. It is only up to a point. Beyond that the increase in the per capita income lowers the fertility rate and as development gains momentum, the rate of population growth declines. The Leibenstein argument is based on Dumont's "Social-capillarity Thesis," which states

that with the increase in per capita income, the desire to have more children to supplement parental incomes, declines. Increased specialization following rising income levels and the consequent social and economic mobility make it a difficult and costly affair to rear a large family. Therefore, the growth rate of population becomes constant and then starts declining gradually as the economy advances toward the path of sustained development, as has happened in the case of Japan and Western countries. There is, according to Leibenstein, a biologically determined maximum growth rate of population between 3 and 4 per cent. In order to overcome this population hump, the necessary critical minimum effort should be large enough. This is discussed with the help of his diagram as given in Fig. 18.3.

The curve N measures the level of per capita income which generates a level of national income growth equal to the growth rate of population. The curve P indicates the rate of population growth at each level of per capita income. Starting from point a which represents the subsistence equilibrium point where there is absence of population and income growth, if the per capita income is raised to y_b , both the population and income growth rates are 1 per cent. At the y_c level of per capita income, the rate of population growth is higher than the rate of national income growth, i.e., $y_c g > y_c e$, the former is 2 per cent while the latter is 1 per cent. Therefore, the per capita income level should be so raised as to increase the national income by more than the rate of population growth. This is only possible after y_e level of per capita income whence the rate of population growth starts declining. Point e is the 3 per cent maximum biologically determined growth rate of population assumed by Leibenstein. y_e is thus the critical minimum per capita income level to generate the process of sustained economic development.

Leibenstein's Projections. Leibenstein has also estimated the size of the critical minimum effort in the case of an underdeveloped economy with a starting population of one million. His calculations with regard to fertility and mortality rates are based on life expectancy and confirm with those of underdeveloped countries in actuality. He makes several projections based on different assumptions. But we take only projection 4b which appears to apply to those underdeveloped countries.

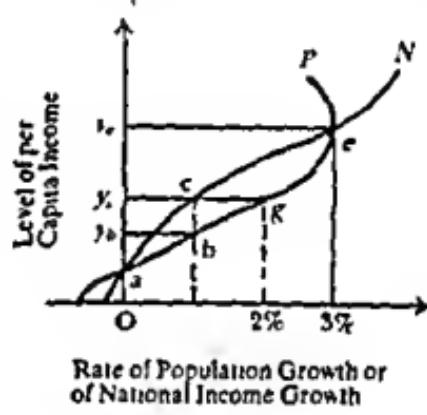


FIG 18.3

hope to check the growth rate of population as the development process gains momentum and is in keeping with the critical minimum thesis of Leibenstein. With the annual rate of population growth at 2.03 per cent, the capital-output ratio 3:1, the required rate of investment is 13.2 per cent for the first five-year period. In the 25th-30th years the population growth rate is the maximum, 2.42 per cent, which requires an investment of 14.5 per cent. Then the population starts declining, and in the 50th-55th years it is 1.49, thus requiring an investment of 13.08 per cent. The required annual rates of national income growth during these periods are 4.40, 4.84, and 4.36 respectively.

A Critical Appraisal

In the Preface to his book, Leibenstein writes that his "aim has been explanation and understanding—not prescription." But like Rostow's 'take-off stage,' his "critical minimum effort thesis" has caught the imagination of economists and planners in underdeveloped countries and is regarded as a prescription to economic backwardness. The Leibenstein thesis is more realistic than Rosenstein-Rodan's "big push" theory. Giving a big push to the programme of industrialization all at once is impracticable in underdeveloped countries, whereas the critical minimum effort can be properly timed and broken up into a series of smaller efforts to put the economy on the path of sustained development. This theory is also consistent with the idea of democratic planning to which the majority of underdeveloped countries are wedded.

Its Defects. But it has its shortcomings.

1. **Population Growth Rate Related to Death Rate.** The theory is based on the assumption that the rate of growth of population is an increasing function of the level of per capita income up to a point, but beyond that it is a decreasing function of the latter. But the first process is related to the decline in the mortality rates due to the advancements in medical science, and improvements in public health measures in underdeveloped countries, and not to an increase in the level of per capita income. In India, there has been a decline in crude death rate from 24 per thousand in 1960 to 13 in 1982, not due to a rise in the per capita income which is almost stationary but as a result of the above-mentioned factors.

2. **Decline in Birth Rate not due to Increase in Per Capita Income.** Similarly the decline in the birth rate cannot be attributed to an increase in the per capita income at the critical minimum level which surpasses the growth rate of population, as is supposed by Leibenstein. His conclusions are based on the experience of advanced Western countries and Japan. But in underdeveloped countries the problem of declining birth rate is mostly socio-cultural in nature. What is required is change

in 'the attitude, understanding, education, social institutions and even certain intellectual perceptions.' Rise in per capita income alone cannot perform the trick. There is no guarantee that with the decline in the birth rate, population would start decreasing as per capita income increases in underdeveloped countries.

3. Ignores State Efforts to Reduce Birth Rate. Leibenstein ignores the state action in bringing down the fertility rate. As the experience of Japan has shown, no underdeveloped country can afford to wait for the per capita income to rise above the critical minimum level so that the birth rate may start declining automatically. In such a situation, she may reach the stage of the population explosion thereby creating more problems than she can solve by the rise in the per capita income.

4. Higher than 3 per cent Growth Rate does not Lead to the Take-off. Suppose a country has succeeded in crossing the population barrier of 3 per cent by increasing the growth rate of income above this. According to Leibenstein, when an economy has reached ye level of per capita income in Fig. 18.1 or *Ok* in Fig. 18.3, it enters the path of endless expansion. Myint questions the correctness of this contention. For it is possible to find cases where abortive 'take-offs' take place "in which a country may for a time succeed in raising its saving and investment ratio above 10 per cent to 12 per cent and raising the rate of growth in its total income above 3 per cent level, but subsequently relapses into a slower rate of growth and stagnation."

5. Neglects Time Element. The theory fails to take into account the time element which is required for sustained efforts during which fundamental changes in the institutional and productive structure should be taking place for ensuring a successful take-off. To quote Myint, "We may therefore question how far this type of analysis, originally designed to illustrate the gear shifts in short-run economic activity of fully developed engine of growth in the advanced countries, is useful for the study of the problem of the long-term economic development of the underdeveloped countries which is concerned with the construction of the engine of growth itself."

6. Complex Relation between Per Capita Income and Growth Rate. Again, according to Professor Myint, the functional relationship between the level of per capita income and the rate of growth in total income is more complex and not so simple, as has been shown by Leibenstein. Firstly, the relation of per capita income with the rate of saving and investment depends on the distributional pattern of income and the effectiveness of financial institutions in mobilizing savings. Secondly, the relation between investment and the resultant output is not determined by a constant capital-output ratio, as is assumed by Leibenstein, but depends on the extent to which 'the p

organization of the country can be improved and how far land-saving innovations can be adopted to overcome the tendency to diminishing returns on additional investment even after the growth rate of population has reached the 3 per cent level.

7. **Applicable to Closed Economy.** The Leibenstein theory does not explicitly explain the influence of foreign capital and other external forces on the levels of income, saving and investment in underdeveloped countries.

Chapter 19

NELSON'S LOW-LEVEL EQUILIBRIUM TRAP

NELSON'S THEORY

R. R. Nelson¹ developed the theory of Low-level Equilibrium Trap for underdeveloped countries. Like Leibenstein's Critical Minimum Effort Thesis, Nelson's theory is also based on the Malthusian hypothesis that with the increase in the per capita income of a country above the 'minimum subsistence level,' population tends to increase. Initially, population grows rapidly with an increase in per capita income. But when the growth rate of population reaches "an upper physical limit," it starts declining with further increases in per capita income.

According to Nelson, "The malady of underdeveloped economies can be diagnosed as a stable equilibrium level of per capita income at or close to subsistence requirements." At a stable equilibrium level of per capita income, the rate of saving and consequently the rate of net investment are at a low level. Efforts made to raise the rate of saving and investment through an increase in the rate of growth of total national income are accompanied by a high rate of population growth which pushes back the per capita income to its stable equilibrium level. Thus underdeveloped economies are caught in a *low-level equilibrium trap*.

Nelson mentions four social and technological conditions which are conducive to trapping. They are.

(i) A high correlation between the level of per capita income and the rate of population growth.

(ii) A low propensity to direct additional per capita income to increasing per capita investment.

(iii) Scarcity of uncultivable arable land.

(iv) Inefficient methods of production.

He also points toward two other factors, cultural inertia and economic inertia. It is cultural inertia that leads to economic inertia, and vice versa.

A study of the economic development of underdeveloped countries reveals that most of them are caught in the low-level equilibrium trap

¹R.R. Nelson, "A Theory of the Low-level Equilibrium Trap," *AER*, December, 1956

due to the presence of the above noted conditions.

Nelson uses three sets of relationships to show the trapping of an economy at a low level of income. First, income is a function of the capital stock, the level of technology, and the size of the population. Second, net investment consists of capital created out of savings in the form of additions to the stock of tools and equipment in the industrial sector plus additions of new land to the amount of land under cultivation. Third, "with low per capita incomes, short-run changes in the rate of population growth are caused by changes in the death rate, and changes in the death rate are caused by changes in the level of per capita income. Yet once per capita income reaches a level well above subsistence requirements, further increases in per capita income have a negligible effect on the death rate."

Given these sets of relationships, the Nelson thesis is explained in Fig. 19.1, Panels (A), (B), (C). In Panel (A), y/p relates to the level of per capita income which is measured on the horizontal axis, and dp/p is

the percentage rate of growth of population measured on the vertical axis. The point S' on the horizontal axis where the growth curve of population (dp/p) equals the level of per capita income, is the minimum subsistence level of per capita income. At this level, population is stationary. But to the left of S' , population is decreasing. If we move above S' , along the growth curve of population, the growth rate of population increases up to the "upper physical limit" U , with the increase in the per capita

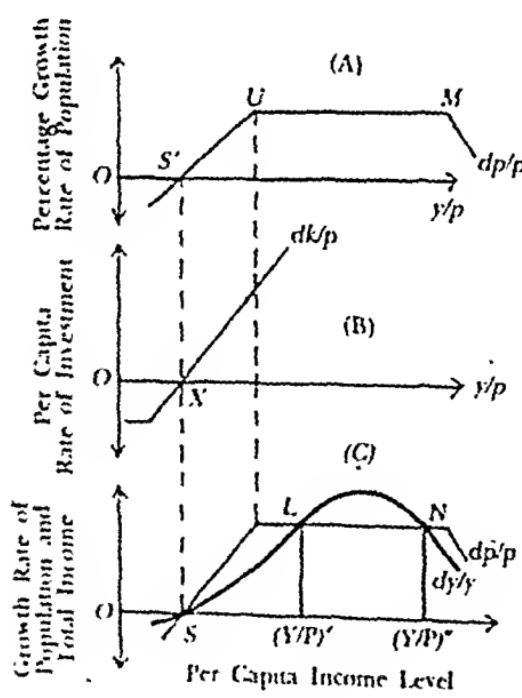


FIG. 19.1

income above the minimum subsistence level. For some time, the population will grow at this level with the rise in per capita income and then it starts declining from point M .

In Panel (B), dk/p is the per capita rate of investment out of savings measured on the vertical axis. The curve (dk/p) is the growth curve of

investment which relates the per capita rate of investment to different levels of per capita income. This curve intersects the horizontal axis at point X which is the level of zero saving. To the left of this point, there is negative investment. In the other hand, if we move above the point X along the growth curve of investment, the per capita rate of investment will rise even beyond the upper physical limit of the growth rate of population as denoted by point U in Panel (A).

In Panel (C), as usual, the horizontal axis measures the level of per capita income. On the vertical axis are measured the rate of population growth and the rate of growth in total income, (dy/y) is the growth curve of income, and (dp/p) is the growth curve of population at the various levels of per capita income. The point S is so drawn that it equals the zero saving level of income X and the minimum subsistence level of per capita income S' so that $S=X=S'$. S is the point of the low-level equilibrium trap, of the zero growth rate where the growth rate of income (dy/y) equals the growth rate of population (dp/p) on the horizontal axis. For any increase in per capita income beyond S , the growth rate of population is higher than the growth rate of income, so that the economy is pushed back to S , the point of stable equilibrium. Thus, the economy is caught in the low-level equilibrium trap. "This low-level equilibrium trap will be stronger the more quickly the rate of population growth responds to a given rise in per capita income and the more slowly the rate of growth in total income responds to an increase in investment." To get out of this "trap" the economy requires "a discontinuous jump" beyond the per capita income level $(y/p)'$ so as to reach the new point of unstable equilibrium L . Beyond this point, income grows at a higher rate than the growth rate of population which is stable at the upper physical limit. Thus the rise in per capita income is cumulative beyond $(y/p)'$ level till the economy reaches $(y/p)''$ level where the growth rate of income equals the growth rate of population at a new stable equilibrium point N . Again, beyond point N , further government action is required to raise the growth rate of income above the growth rate of population.

Nelson points towards a number of factors to escape the low-level equilibrium trap. First, there should be a favourable socio-political environment in the country. Second, the social structure should be changed by laying greater emphasis on thrift and entrepreneurship. Greater incentives should be provided to produce more. And incentives should also be provided to limit the size of the family. Third, measures should be adopted to change the distribution of income, at the same time enabling accumulation of wealth by investors. Fourth, there should be an all-pervading government investment programme. Fifth, income and capital should be increased by obtaining funds from abroad.

improved production techniques should be used to utilise existing resources more fully so that income is increased from given inputs.

To escape the low-level equilibrium trap in underdeveloped countries requires the simultaneous adoption of all these measures so that the growth rate of income is increased more than the growth rate of population. Once this is achieved above a certain minimum per capita income level, sustained growth will take place without further government action until a high level of per capita income is reached.²

²For criticism of the theory, refer to Leibenstein's thesis, except point 4.

Chapter 20

THE "BIG PUSH" THEORY

ROSENSTEIN-RODAN'S THESIS

The theory of the "big push" is associated with the name of Professor Paul N Rosenstein-Rodan.¹ The thesis is that a "big push" or a large comprehensive programme is needed in the form of a high minimum amount of investment to overcome the obstacles to development in an underdeveloped economy and to launch it on the path to progress. To stress his argument, he quotes an analogy from an MIT Study. "There is a minimum level of resources that must be devoted to... a development programme if it is to have any chance of success. Launching a country into self-sustaining growth is a little like an airplane off the ground. There is a critical ground speed which must be passed before the craft can become airborne.."² The theory states that proceeding "bit by bit" will not launch the economy successfully on the development path, rather a minimum amount of investment is a necessary condition for this. It necessitates the obtaining of external economies that arise from the simultaneous establishment of technically interdependent industries. Thus indivisibilities and external economies flowing from a minimum quantum of investment are a prerequisite for launching economic development successfully.

Rosenstein-Rodan distinguishes between three different kinds of indivisibilities and external economies. One, indivisibilities in the production function, especially the indivisibility of the supply of social overhead capital, two, indivisibility of demand, and three, indivisibility in the supply of savings. Let us analyse the role of these indivisibilities in bringing economic development.

I Indivisibilities in the Production Function. According to Rosenstein-Rodan, indivisibilities of inputs, outputs or processes lead to increasing returns. He regards social overhead capital as the most important instance of indivisibility and hence of external economies on the supply side. The services of social overhead capital comprising basic industries like power, transport, and communications are indirectly

¹Notes on the Theory of 'Big Push,' in *Economic Development of Latin America*, Ch III, (ed.) H S Ellis and W W Wallisch, 1961

²The Objectives of US Economic Assistance Programmes, 1957

productive and have a long gestation period. They cannot be imported. Their installations require a "sizeable initial lump" of investment. So excess capacity is likely to remain in them for some time. They also possess "an irreducible minimum industry mix of different public utilities, so that an underdeveloped country will have to invest between 30-40 per cent of its total investment in these channels."

Thus, social overhead capital is characterised by four indivisibilities. *First*, it is irreversible in time and, therefore, must precede other directly productive investments. *Second*, it has a minimum durability, thus making it very lumpy. *Third*, it has a long gestation period. *Last*, it has an irreducible minimum industry mix of different kinds of public utilities. These indivisibilities of supply of social overhead capital are one of the principal obstacles to development in underdeveloped countries. Therefore, a high initial investment in social overhead capital is necessary in order to pave the way for quick-yielding directly productive investments.

2. Indivisibility of Demand. The indivisibility or complementarity of demand requires simultaneous setting up of interdependent industries in underdeveloped countries. This is because individual investment projects have high risks as low incomes limit the demand for their products. To illustrate, Rosenstein-Rodan takes first a closed economy where a hundred disguised unemployed workers are employed in a shoe factory whose wages constitute an additional income. If these workers spend all their income on shoes they manufacture, the shoe market will have a regular demand and thus succeed. But the fact is that they would not like to spend all their additional income on shoes, human wants being diverse. Nor will the people outside the factory buy additional shoes when they are poor. Thus, the new factory will be abandoned for want of an adequate market. To vary the example, suppose that ten thousand unemployed workers are engaged in one hundred factories (instead of hundred workers in one factory) who produce a variety of consumer goods and spend their wages on buying them. The new producers would be each others' customers and thus create market for their goods. The complementarity of demand reduces the risk of finding a market and increases the incentive to invest. In other words, it is the indivisibility of demand which necessitates a high minimum quantum of investment in inter-dependent industries to enlarge the size of the market. Rosenstein's example of the shoe factory is explained in Fig. 20.1. The curves ATC and MC represent the costs of a plant which is a little smaller than the optimum-size plant. D_1 and MR_1 are the demand and marginal revenue curves of the shoe factory when investment is made only in it. It produces OQ_1 (10,000) shoes and sells at OP_1 price which does not cover the ATC . So the factory is incurring $CabP_1$ losses. But when

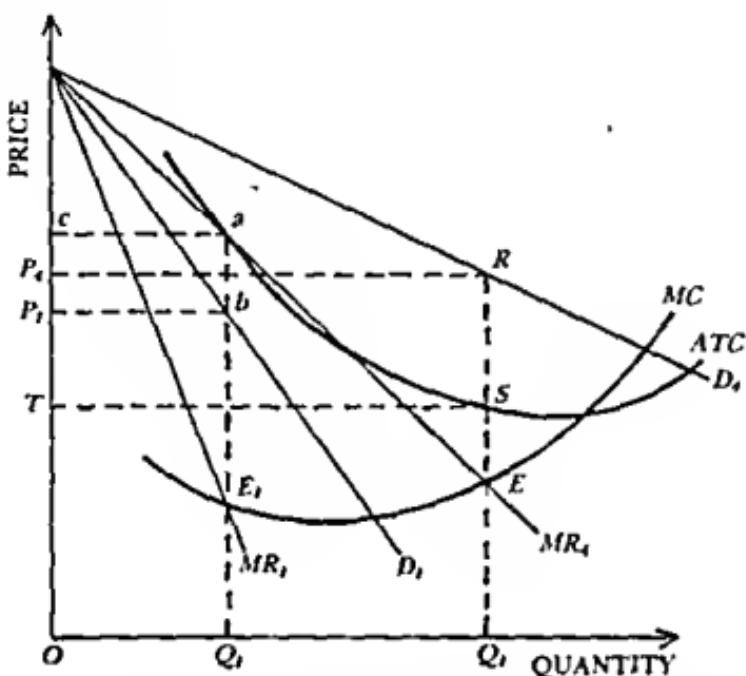


FIG 20.1

simultaneous investment is made in a number of different industries, the market for shoes expands. The demand for shoes rises to D_4 (four times) so that the quantity of shoes becomes OQ_4 (40,000). Now the shoe factory earns profits equal to $P_4 RST$. Similarly, other industries earn profits.

3. Indivisibility in the Supply of Savings. A high income elasticity of saving is the third indivisibility in Rosenstein's theory. A high minimum size of investment requires a high volume of savings. This is not easy to achieve in underdeveloped countries because of low incomes. To overcome this, it is essential that when incomes increase due to an increase in investment, the marginal rate of saving should be very much higher than the average rate of saving.

Given these three indivisibilities and the external economies to which they give rise, a "big push" or a minimum quantum of investment is required to overcome the obstacles to development in underdeveloped countries. "There may be finally a phenomenon of indivisibility in the vigour and drive required for a successful development policy," writes Rodan. But proceeding bit by bit in an isolated and small way does not lead to a sufficient impact on growth. A climate for development is only created when investment of a minimum speed or size is made within an underdeveloped economy.

A Critical Appraisal

Professor Rosenstein Rodan regards his theory of development

superior to the traditional static equilibrium theory because it appears to contradict the latter's motto that nature does make jumps. His theory is based on more realistic assumptions of indivisibilities and "nonappropriabilities" in the production functions. It examines the path towards equilibrium and not merely the conditions at a point of equilibrium. It is, thus, primarily a theory of investment concerned with imperfect markets in underdeveloped countries. It is a high minimum quantum of investment rather than price mechanism in such imperfect markets that takes an underdeveloped economy towards an optimum position.

The "big push" theory is, however, not free from certain defects.

1. Negligible Economies from Investment in Export and Import Substitutes. The main justification for a "big push" in investment on social overhead capital is the realization of extensive external economies. But as pointed out by Viner,³ underdeveloped economies realize greater economies from world trade independently of home investment. Rodan has recognised this fact, but keeps silent over another reality that in the newly developing countries investment for export and for marginal import substitutes occupies a large chunk of total investment. The external economies argument for a "big push" losses its justification because external economies are negligible in the above types of investments.

2. Negligible Economies even from Cost-Reducing Investments. Even in the production of local consumer goods and most public utilities, potential external economies can be realized in a limited way. Investments in the case of fairly inelastic demand are cost-reducing rather than output-expanding. Since external economies accrue from the output-expansion in the initial industry, they are negligible in the case of cost-reducing investment.

3. Neglects Investment in the Agricultural Sector. One of the principal defects of the "big push" theory is that it emphasizes the importance of a high level of investment in all types of industries—capital goods, consumer goods and social overhead capital—except the agricultural and other primary industries. In agriculture-oriented underdeveloped countries, a "big push" of large investments in irrigation, transportation facilities, land reforms, and in improving agricultural practices through better tools, implements, fertilisers, etc., are as important as investment in other industries. The neglect of the agricultural sector in such economies will retard rather than accelerate their development.

4. Generates Inflationary Pressures. Even the launching of a high

³"Stability and Progress: The Poorer Countries Problem," in *Stability and Progress in the World Economy*, (ed.) D. Hague, 1958.

minimum amount of investment on social overheads is highly expensive. Moreover, overhead capital has a high capital-output ratio and a very long gestation period. This makes the task of developing LDCs more difficult and longer. This is because such countries do not possess enough financial resources to provide social overhead capital required for the "big push". The period during which social overhead capital is being formed will also be one of inflationary pressures because of the shortage of consumer goods. These inflationary pressures, in turn, would prolong the process of building social overhead capital, thus making it highly difficult for an LDC to achieve rapid economic development.

5. Low Investment Leads to Large Increase In Output. Professor John Adler's statistical analysis of the economic development of the world reveals that "a relatively low level of investment 'pays off' well in the form of additional output."⁴ This conclusion is based on his study of low capital-output ratios in India, Pakistan and in many other Asian and Latin American countries. Thus, there appears to be little conclusive proof that a "big push" of investment is a prerequisite for the economic development of underdeveloped countries.

6. Admlnistrative and Institutional Difficulties. Further, the "big push" theory is based upon a burst of state-engineered investment. Rosenstein himself points out that in the presence of imperfectly developed markets in underdeveloped countries, the price mechanism is a very poor signalling system. But the dependence on state investment itself poses a number of problems. The administrative and institutional machinery in such economies is weak and inefficient. Difficulties are bound to arise not only in drawing up the plans for various projects but also in their execution. Lack of statistical information, technical know-how, trained personnel and coordination between the various departments are some of the complex problems which are not easy of solution. Moreover, the majority of underdeveloped countries have a mixed economy, where the private and public sectors are mostly competitive rather than complementary. This leads to mutual rivalry and suspicion which are inimical to a balanced growth of the economy.

7. Not an Historical Fact. Last but not the least, Professor Rodan's thesis is a sort of 'prescription' for launching underdeveloped countries on the path to progress rapidly in the present. It is not an historical explanation of how development takes place. Historically, the presence or absence of a "big push" has not been a distinguishing feature of growth anywhere, according to Professor Hagen.⁵

⁴"World Economic Growth—Retrospect and Prospect," *RES* August 1956 -

⁵E E Hagen, *On the Theory of Social Change*, 1962

Chapter 21

THE DOCTRINE OF BALANCED GROWTH

MEANING OF BALANCED GROWTH

The doctrine of balanced growth has several authors who interpret it in their own way. To some it means investing in a laggard sector or industry so as to bring it abreast of others. To others, it implies that investment takes place simultaneously in all sectors or industries at once. Still to others, it means balanced development of manufacturing industries and agriculture.¹

Balanced growth, therefore, requires balance between different consumer goods industries, and between consumer goods and capital goods industries. It also implies balance between industry and agriculture, and between the domestic and export sector. Further, it entails balance between social and economic overheads and directly productive investments, and between vertical and horizontal external economies. In fine, the theory of balanced growth states that there should be simultaneous and harmonious development of different sectors of the economy so that all sectors grow in unison.

For this, balance is required between the demand and supply sides. The supply side lays emphasis on the simultaneous development of all inter-related sectors which help in increasing the supply of goods. It includes the simultaneous and harmonious development of intermediate goods, raw materials, power, agriculture, irrigation, transport, etc., and all industries producing consumer goods. On the other hand, the demand side relates to the provision for larger employment opportunities and increasing incomes so that the demand for goods and services may rise on the part of the people. The demand side is related to supplementary industries, consumer goods industries, especially agriculture and manufacturing industries. When with the simultaneous setting up of all types of industries large number of people are employed, they create demand for each other's goods. In this way, all goods will be sold out.

The doctrine of balanced growth has been advocated by Rosenstein-Rodan, Ragnar Nurkse, and Arthur Lewis. Let us examine the concept in detail with reference to Rodan's and Nurkse's formulations.

¹See, C.P. Kindleberger, op. cit., Ch. 9 for different interpretations.

Explanation of the Theory

Rosenstein-Rodan was the first economist who propounded the theory of balanced growth without using these words in his 1943 article.² He argued that the whole of the industry to be created in eastern and south-eastern Europe should be treated and planned like one huge firm or trust. His main contention is that "often SMP (Social Marginal Product) of an investment is different from its PMP (Private Marginal Product) and that when a group of industries is planned together in accordance with their SMPs, the rate of growth of the economy is greater than it would have been otherwise." This is because an individual entrepreneur is interested only in the PMP of investment and is not likely to have an accurate assessment of its SMP. In support of his argument Rosenstein-Rodan gives a number of examples where the SMP of an investment is greater than its PMP. It is complementarity of different industries which leads to the most profitable investment from the standpoint of the society. He gives the example of the shoe factory. Suppose a large shoe factory is started in a region where 20,000 unemployed workers are employed. If these workers spent all their wages on shoes, a market for shoes would be created. But the trouble is that the workers will not spend all their wages on shoes. If, instead, a whole series of industries were started which produce the consumption goods on which workers would spend all their incomes, all the industries would expand via the multiplier process. The planned creation of such a complementary system of industries would reduce the risk of not being able to sell their products and would lead to a large scale planned industrialisation. This very idea has been developed and elaborated by Ragnar Nurkse in his thesis.

According to Nurkse,³ vicious circles of poverty are at work in underdeveloped countries which retard economic development. If, however, they are broken, economic development will follow. The vicious circles operate both on the supply side and the demand side.

On the supply side, there is the small capacity to save resulting from low real income. The low real income is due to low productivity which in turn is due to deficiency of capital. The deficiency of capital is the result of low capacity to save. On the demand side, inducement to invest is low because of low demand which is due to low level of real income of the people. The inducement to invest is, therefore, limited by the size of the market which in turn depends upon productivity, because 'the capacity to buy is in fact the capacity to produce.' And productivity depends on

²Problems of industrialisation of Eastern and South-Eastern Europe, in op. cit. (ed.) Aggarwal and Singh

³Problems of Capital Formation in Underdeveloped Countries, Ch. 1.

the amount of capital used in production. But for an individual entrepreneur the use of capital is inhibited by the small size of the market which in turn is limited by low productivity. Thus the vicious circle is complete.

How to Break these Circles? Individual investment decisions cannot solve the problem. Nurkse cites Rosenstein-Rodan's famous example of the shoe factory to substantiate his argument. Suppose, a shoe industry is set up. If in the rest of the economy nothing is done to increase productivity and purchasing power, the market for the additional shoe output is likely to be deficient. People engaged in the industry will not like to spend all their income on shoes, human wants being diverse. Nor will the people outside the new industry buy a pair of shoes every year when they do not have enough to meet their bare necessities. Thus, the new industry is likely to fail for want of the adequate market.

How Can the Market be Enlarged? The size of the market can be enlarged by monetary expansion, by salesmanship and advertising, by abolishing trade restrictions and by expanding the economic infrastructure. It can also be widened either by a reduction in prices (money incomes remaining constant), or by an increase in money incomes while keeping prices constant. This implies increase in productive efficiency and in real income. But in underdeveloped countries market is not large enough to permit production on a scale that may lead to reduction in costs. Moreover, inelastic consumer demand, technical discontinuities and lack of enterprise keep down the demand for capital.

Therefore, the only way out of this impasse, according to Nurkse, is "more or less synchronized application of capital to a wide range of different industries. Here is an escape from the deadlock, here the result is an over-all enlargement of the market. People working with more and better tools in a number of complementary projects become each others' customers. Most industries catering for mass consumption are complementary in the sense that they provide a market for, and thus support each other. The case for 'balanced growth' rests on the need for a 'balanced diet'."

Nurkse takes the cue for the notion of balanced growth from Say's Law and cites Mill's formulation of it, "Every increase of production, if distributed without miscalculation among all kinds of produce in the proportion which private interest would dictate, creates, or rather constitutes, its own demand." But a substantial use of capital by an individual entrepreneur in any particular industry may be unprofitable due to the small size of the market. On the contrary, a synchronized use of capital to a wide range of projects in different industries may raise the general level of economic efficiency and enlarge the size of the market. "A frontal attack of this sort—a wave of capital investments in a

number of different industries"—has been called by Nurkse, balanced growth.

"The way to do this is by a simultaneous wave of new plants composed in such a way that full advantage is taken of complementaries and external economies on the supply side and of the complementarities of markets on the demand side." Investment in a wide range of industries leads to vertical and horizontal integration of industries, a better division of labour, a common source of raw materials and technical skill, an expansion of the size of the market and better utilization of social and economic overhead capital. Investment in productive equipment and in human capital should be simultaneous, for investment in the former would be useless unless people are educated and healthy to operate it. Nurkse pleads that social and economic overhead facilities should be created ahead of demand to stimulate and support the various sectors of the economy. Private enterprise in an underdeveloped country is incapable of taking advantage of these external economies because of its incapacity to start 'a wave of capital investments' on a wide range of projects. But Nurkse believes that private enterprise can achieve the desired effect under the stimulus of certain incentives.⁴ He pleads that ordinary price incentives may bring about balanced growth in a small degree. However, a wave of new applications of capital over a wide range of different industries can be promoted by the monetary effects of the initial investment and other effects.

The doctrine of balanced growth requires a balance between different sectors of the economy during the process of economic growth. There should be proper balance between investment in agriculture and industry. Agriculture and industry are complementary. An increase in industrial output requires an expansion of agricultural output. If employment increases in the industrial sectors, it will lead to an increase in the demand for foodstuffs. Supplies of food must, therefore, be

⁴In his first Istanbul Lecture (1958), Nurkse said, "According to some writers the balanced growth argument implies that the market mechanism is eliminated and that investments must be effected according to a coordinated plan. This opinion seems to me dubious. As a means of creating inducements to invest, balanced growth can be said to be relevant primarily to a private enterprise system. State investment can and often does go ahead without any market incentives. Planning authorities can apply capital, if they have any, in whatever they may choose... It is private investment that is attracted by markets and that needs the inducement of growing markets. It is here that the element of mutual support is so useful and, for rapid growth, indispensable" (*Equilibrium and Growth in the World Economy*). This is not a correct view, for the price mechanism alone is not capable of producing the simultaneous and mutually supporting wave of investments required by balanced growth. It is only deliberate planning and coordination whether private or governmental that can do the trick.

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The "Big Push" Theory

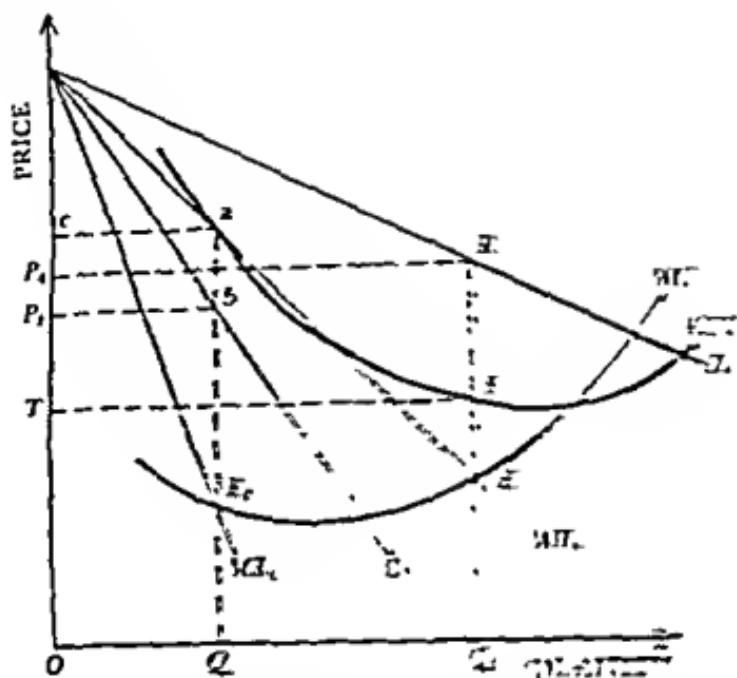


FIG. 21.2

simultaneous investment is made in a number of different industries, the market for shoes expands. The demand for shoes rises to D_1 (four times) so that the quantity of sales become $Q_1 = 4 Q_0$. Now the shoe factory earns profits equal to £1250. Similarly other industries earn profits.

3. Indivisibility in the Supply of Factors. It may assume elasticity of saving is the third individualizing it. Investment theory. A high minimum size of investment requires a high volume of savings. This is not easy to achieve in underdeveloped countries because of low incomes. To overcome this, it is essential that when incomes increase due to an increase in investment, the marginal rate of saving should be very much higher than the average rate of saving.

Given these three individualities and the external economies to industry they give rise, a "big push" is a minimum quantum of investment required to overcome the obstacles to development in underdeveloped countries. There may be first a phenomenon of industrialization with vigour and drive required for a successful development. This is the Rodart. But proceeding in this way it is isolated and cannot easily lead to a sufficient impact of growth. A climate for growth is created when investment is a minimum speed of growth in an underdeveloped economy.

raised. Similarly supplies of raw materials should also rise with the expansion of the industrial sector.⁵ It is imperative that the agricultural sector must also develop along with the industrial sector otherwise inflation will set in.

A balance is also required between the domestic sector and the foreign sector. "Export revenue is an important source for financing development; imports rise as production and employment expand; and domestic trade itself requires increasing imports of necessary materials and equipment. To pay for these rising imports, and to allow exports to finance development as much as possible, the country cannot expand its domestic trade at the expense of its foreign trade. The domestic sector must grow in balance with the foreign sector."⁶ Nurkse observes, "Balanced growth is a good foundation for international trade, as well as a way of filling the vacuum at the periphery." He underlines the importance of improvement in transport facilities and advocates reduction in transport costs, abolition of tariff barriers and creation of custom unions to enlarge the market in the economic and geographic sense. In this way, developing countries would become each others' customers, increase their per capita consumption of agricultural and manufactured goods with the increase in their income elasticity of demand. Nurkse does not advocate autarky. With the increase in domestic production, the domestic as well as the foreign market is likely to expand. But even if foreign trade shrinks due to restrictions imposed by other countries, the best way is to expand its output for domestic consumption, thereby increasing employment and income in the economy.

To sum up in the words of Lewis, "In development programmes all sectors of the economy should grow simultaneously, so as to keep a proper balance between industry and agriculture and between production for home consumption and production for export... the logic of this proposition is as unassailable as its simplicity."⁷

Criticism of the Doctrine of Balanced Growth

The doctrine of balanced growth has been severely criticised by Hirschman, Singer, Kurihara and others on the following grounds:

1. **Rise in Costs.** Simultaneous establishment of a number of industries

⁵Nurkse's entire argument relates to final consumer goods. So far as intermediate products are concerned, he favoured vertical imbalance in his second Istanbul Lecture (1951). Following Hirschman, he said that it is SOC investment that provides the necessary inducements leading to DPA investment.

⁶Meier and Baldwin, *op. cit.*, p. 348.

⁷W.A. Lewis, *op. cit.*, p. 283.

is likely to raise money and real costs of production, and so make them economically unprofitable to operate in the absence of sufficient capital equipment, skills, cheap power, finance and other necessary raw materials.

2. No Attention to Reducing Costs. Kindleberger observes that instead of starting with new industries, Nurkse's theory does not consider the possibility of cost reduction in existing industries.

3. Other Problems. Granted that it is within the competence of an underdeveloped country to establish new industries, a number of other problems are likely to arise. When the new industries are established, the demand for the products of the existing firms will decrease and make them unprofitable. At the same time, the demand for factors of production will rise which is likely to raise the prices of factors of production in all industries. As J. Marcus Fleming has said, "Whereas the balanced growth doctrine assumes that the relationship between industries is for the most part complementary, the limitation of factor supply ensures that the relationship is for the most part competitive."⁸

4. Falls as a Theory of Development. According to Hirschman⁹ the doctrine of balanced growth fails as a theory of development. Development implies the process of change of one type of economy into another more advanced type. But the doctrine of balanced growth would involve the superimposition of an entirely new self-contained modern industrial sector upon the stagnant and equally self-contained traditional sector. Hirschman opines, "This is not growth, it is not even the grafting of something new on to something old; it is a perfectly dualistic pattern of development."

5. Beyond the Capabilities of Underdeveloped Countries. Again, according to Hirschman, the doctrine "combines a defeatist attitude towards the capabilities of underdeveloped economies with completely unrealistic expectations about their creative abilities."¹⁰ On the one hand, officials in underdeveloped countries lament that the necessary skills and other resources for development are lacking in the economy. On the other hand, the protagonists of the balanced growth doctrine assume that persons lacking in skills and entrepreneurial ability become omniscient overnight and are in a position to start a chain of new industries. The whole doctrine thus appears to be a contradiction in itself. It seems strange that what cannot be done piecemeal, can be done in a big way and is considered to be within the physical and intellectual competence of an underdeveloped country. It is as if a builder, not in a

⁸J M Fleming, "External Economics and Balanced Growth," in Aggrawal and Singh (ed.) *op. cit.*, p 279

⁹A O. Hirschman, *The Strategy of Economic Development*, p 52

¹⁰Ibid., p 53.

position to construct the ground floor, were advised to build the next two floors instead. As Dr Singer has stated, "The advantages of multiple development may make interesting reading for economists but they are gloomy news indeed for the underdeveloped countries. The initial resources for simultaneous developments on many fronts are generally lacking."¹¹ If a country possesses enough skills and resources she would not be underdeveloped in the first instance.

6. Disproportionality in Factors. Another problem in underdeveloped countries is the disproportionality in the factors of production. In some countries, labour is in abundance but capital and entrepreneurial skill are scarce. While in others, labour and capital are scarce but other resources are in abundance. This is a great hindrance to the practical application of the concept of balanced growth.

7. Shortage of Resources. The doctrine fails to solve the problem of the shortage of resources. It is based on Say's Law that supply creates its own demand. But supply of goods refers to the demand for factors especially for capital which does not create its own supply. When investments are being made simultaneously in a number of new industries, the demand for factors would become competitive. But the supply of factors is inelastic in underdeveloped countries. Thus the main argument of the theory breaks down. Nurkse, however, assumes that resources are available for net investment and a given labour force is being equipped with an increasing stock of capital. But the problem of allocation of the increasing stock of capital still remains. In such a situation, writes Dr Singer, "perhaps guerilla tactics are more suitable for the circumstances of underdeveloped countries than a frontal attack."

8. Wrong Assumption of Increasing Returns. The doctrine of balanced growth pre-supposes the need for balanced investment to provide a growing demand, and the existence of increasing returns. But these two forces pull in opposite directions. If returns increase considerably, an underdeveloped country would not like to invest in a railway line and a roadway between the same points, and it will have to choose, for instance, between an oil refinery and a steel mill. If simultaneous investments are made in all related fields, the appearance of bottlenecks of raw materials, prices, factor shortages, etc., will lead to decreasing returns. Thus decreasing and not increasing returns favour balanced growth.

9. Capital Lumpiness not Essential for Development. Although capital 'lumpiness' of many social and economic overheads is often given as a reason for investing large sums of money immediately, yet the

¹¹H.W. Singer, *Economic Progress in Underdeveloped Countries*, pp. 7-8.

experience of many developed countries suggests that many services can be provided initially at low investment costs. For example, there are other ways of generating electricity than by damming a big river; diesel-generating sets or thermal plants can be installed. If capital is extremely scarce, a low investment-low cost technique with a quick fruition lag is more economical. As Dr Singer says, "Think Big's sound advice to underdeveloped countries but 'Act Big' is unwise counsel if it spurs them to do more than their resources permit."¹²

10. Balanced Growth not Essential for Induced Investment. According to Kurihara, "Balanced growth is not, as Nurkse supposes, to be desired to induce private investment but to be desired for its own sake, as far as an underdeveloped country is concerned. Nurkse's complaints about an underdeveloped economy's restricted markets and low real income tending to inhibit the private inducement to invest would be unnecessary if autonomous public investment of a capacity increasing as well as income generating nature was allowed to play a greater role."

11. Does not Consider Planning. The Nurkesian doctrine of balanced growth is primarily related to private enterprise economy where the need for planning does not arise. In fact, simultaneous investment in all sectors requires planning direction and coordination by the government. As aptly pointed out by Myrdal, "Nurkse did not explain how his limited desideratum of balanced growth of different industries... should be fitted into the type of comprehensive planning that is the declared policy in all South Asian Countries and that has a strong rationale in their actual situation."¹³

12. Concept of Balanced Growth Applicable to Developed Countries. Further, the balanced growth doctrine is in fact the application of Keynesian underemployment situation to an underdeveloped economy. According to the Keynesian theory, simultaneous multiple development during the upswing of the trade cycle can lead to a balanced recovery of economic activity "for the industries, machines, managers, and workers, as well as consumption habits, are all there, only waiting to resume their temporarily suspended functions and roles." But in an underdeveloped economy this is not so whether the State lends a helping hand or not.¹⁴ Because in such economies there is no temporary suspension of

¹²Professor J.K. Galbraith has stressed the same point in *Economic Development in Perspective* (p. 25). He says, "Not long ago, in a neighbouring Asian country where there is much unemployment and scarcity of capital, I saw expensive automatic gates imported from abroad, being installed at the railroad crossing. These are a necessary development in those countries where no one is any longer available for the effective life of a railway gatekeeper. But not here...and considerable money would have been saved and utilized elsewhere." Italics mine.

¹³G. Myrdal, *Asian Drama*, 1968.

¹⁴A.O. Hirschman, *op. cit.*, p. 54.

economic activity. Economic activity is static. Capital, skills, factor supplies and economic infrastructure are woefully lacking. It is, therefore, wrong to apply a theory applicable to a developed economy on an underdeveloped economy.

13. **Scarcities and Bottlenecks Encourage Growth.** According to Paul Streeten, historically, it was not balanced growth but scarcities and bottlenecks that provided the stimulus to the inventions that revolutionized England's and the world's economic system, and that inventions in turn created new scarcities and bottlenecks. Had the world depended on balanced development, it would have reduced or even eliminated the incentives for discoveries, or at any rate for their application. Thus it is on unbalanced growth that the history of technological progress rests.

We may conclude with Dr Singer that "the doctrine of balanced growth is premature rather than wrong in the sense that it is applicable to a subsequent stage of sustained growth rather than to the breaking of a deadlock."¹⁵

¹⁵Hans W. Singer, *International Development, Growth and Change*, 1964.

Chapter 22

THE CONCEPT OF UNBALANCED GROWTH

INTRODUCTION

The theory of unbalanced growth is the opposite of the doctrine of balanced growth. According to this concept, investment should be made in selected sectors rather than simultaneously in all sectors of the economy. No underdeveloped country possesses capital and other resources in such quantities as to invest simultaneously in all sectors. Therefore, investment should be made in a few selected sectors or industries for their rapid development, and the economies accruing from them can be utilized for the development of other sectors. Thus the economy gradually moves from the path of unbalanced growth to that of balanced growth. Economists like Singer, Kindleberger, Streeten, etc., have expressed their views in favour of the unbalanced growth doctrine which are in fact the criticisms of the theory of balanced growth. It is, however, Hirschman who has propounded the doctrine of unbalanced growth in a systematic manner.¹

Hirschman's Strategy. The concept of 'unbalanced growth' has been popularized by Hirschman.² It is his contention that deliberate unbalancing the economy, according to a pre-designed strategy, is the best way to achieve economic growth in an underdeveloped country. According to Hirschman, investments in strategically selected industries or sectors of the economy will lead to new investment opportunities and so pave the way to further economic development. He maintains that "development has of course proceeded in this way, with growth being communicated from the leading sectors of the economy to the followers, from one industry to another, from one firm to another." He regards development as a "chain of disequilibria" that must keep alive rather than eliminate the disequilibria, of which profits and losses are symptoms in a competitive economy. If the economy is to be kept moving ahead, the task of development policy is to maintain tensions, disproportions and disequilibria. This "seesaw advance" is induced by one disequilibrium that in turn leads to a new disequilibrium and so on *ad infinitum*.

¹Rostow also favours unbalanced growth and explains in terms of the leading sectors

²A.O. Hirschman, *op. cit.*, Chapters 4-7.

According to Hirschman, when new projects are started they appropriate external economies created by previous projects and create new external economies that can be exploited by subsequent ones. There are some projects that appropriate more external economies than they create which he calls *convergent series* of investments. Hirschman also calls them induced investments for they are net beneficiaries of external economies. There are other projects too that create more external economies than they appropriate which he characterizes as *divergent series* of investments. From the point of view of the economy, the latter may have a greater social desirability than private profitability, whereas induced investments may be less desirable from the social viewpoint. In practice, development policy should aim at (i) the prevention of convergent series of investments which appropriate more external economies than they create; and (ii) the promotion of divergent series in which more economies are created than are appropriated. Development can only take place by unbalancing the economy. This is possible by investing either in social overhead capital (SOC) or in directly productive activities (DPA). The former creates external economies while the latter appropriates external economies.

Unbalancing the Economy with SOC. Social Overhead Capital has been defined as "comprising those basic services without which primary, secondary, and tertiary productive activities cannot function." In SOC are included investments on education, public health, communications, transportation and conventional public utilities like light, water, power, irrigation and drainage schemes, etc.

A large investment in SOC will encourage private investment later in Directly Productive Activities (DPA). For example, cheaper supply of electric power may encourage the establishment of small industries. SOC investments indirectly subsidise agriculture, industry or commerce by cheapening various inputs which they use or by reducing their costs. Unless SOC investments provide cheap or improved services, private investments in DPA will not be encouraged. Thus the SOC approach to economic development is to 'unbalance' the economy so that subsequently investments in DPA are stimulated. As Hirschman puts it, "Investment in SOC is advocated not because of its direct effect on final output, but because it permits and in fact invites DPA to come in....Some SOC investment is required as a prerequisite of DPA investment."

Unbalancing the Economy with DPA. An imbalance can also be created via DPA. A government might directly or indirectly invest in DPA instead of investing in SOC. If DPA investment is undertaken first, the shortage of SOC facilities is likely to raise production costs substantially. In course of time, political pressures might stimulate

stimulate investment in SOC also. Investment sequences are generated by profit expectations and political pressures. Profit expectations generate the sequence from SOC to DPA and political pressures from DPA to SOC.

The Path to Development. Hirschman calls the first sequence (from SOC to DPA) "development via excess capacity of SOC" and the second sequence (from DPA to SOC) "development via shortage of SOC." As to

which sequence should be followed first for economic development, Hirschman prefers that sequence which is "vigorously self-propelling." This can be explained with the help of Hirschman's slightly modified diagram Fig. 22.1.

DPA investments are measured along the vertical axis. The curves *a b* are 'isoquants' showing various quantities of DPA and SOC which will give the same gross national product at any point. As we move to a higher curve, it represents a higher gross national product. The curves are so drawn that the 45° line through the origin connects the optimal points on the different curves. This line shows the balanced growth of DPA to SOC.

Hirschman makes two assumptions: firstly, that SOC and DPA cannot be expanded simultaneously and secondly, that sequence of expansion should be adopted which maximizes 'induced' decision-making.

If the path to development is followed via excess capacity of SOC, the economy will follow the dotted line *AA'BB'C*. When the economy increases SOC from *A* to *A'* the induced DPA increases to *B'* until balance is restored at *B* where the whole economy is on a higher level of output. The higher gross national product thus achieved induces government to increase SOC further to *B'*; DPA also follows suit to point *C* via *C'*.

If the other path to development via shortage of SOC is followed, the economy moves along the thick line *AB'BC'C*. When DPA is increased to *B'*, SOC has to move to *A'* and then to *B*. And when DPA is increased further to *C'*, balance requires SOC to increase to *C* via *B''*.

It is to be noted that development path via excess SOC capacity is

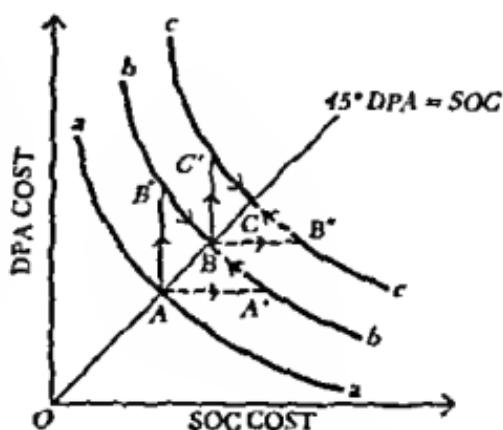


FIG. 22.1

more continuous and smooth than the second path. It is in a way what Hirschman calls "self-propelling." The other path via SOC shortage capacity is not so, because if there is a belated adjustment of SOC, as it is likely to be due to the absence of political pressures in the beginning, the DPA cost of producing a given output rises. According to Hirschman, "Development via SOC shortage is an instance of the 'disorderly,' 'compulsive' sequence while via excess SOC capacity is essentially permissive."

Linkages. Having studied the virtues of specific imbalance, the problem is one of finding the kind of imbalance that is likely to be most effective. Any investment may have both "forward linkage," and "backward linkage" effects. Forward linkage effects encourage investment in *subsequent* stages of production, and backward linkage effects in *earlier* stages of production. Development should aim at discovering projects with the largest total linkage. Such projects vary from time to time and country to country, and can be found only by empirical studies of their input-output tables. Hirschman says, "The industry with the highest combined linkage score is iron and steel. Perhaps the underdeveloped countries are not so foolish and so exclusively prestige-motivated in attributing prime importance to this industry." But he says further that "the industrial development clearly cannot be started everywhere with an iron and steel industry just because the industry maximizes linkage," the reason being the lack of interdependence and linkage in underdeveloped countries. For example, agriculture, including primary production, and mining are weak in both backward and forward linkage effects. The primary production activities mostly of the "enclave" type leading to exports have little development effects on the economy in adding either to employment or to gross national product in an underdeveloped country.

Last Industries First. Hirschman, therefore, advocates the setting up of "last stage industries first." In making industrial products, a developing country need not undertake all the stages of production simultaneously. It can begin with the manufacture of durable consumer goods at the final stages of production. It can import many converting, assembling and mixing plants for final touches to almost finished products. In this way, the country can turn out finished consumer goods that it was previously importing, and then move on to the higher stages of production—to intermediate goods and machines through backward linkage effects. "Backward linkage effects are important not only from secondary back to primary production, but also from tertiary back to both secondary and primary production." Backward linkage effects are the combined result of several last stage industries in a country. A backward linkage effect is produced by increases in demand. Therefore,

when the demand for import-replacing commodities increases, it justifies domestic last stage production. In other words, in the making of some products, when demand reaches a certain 'threshold', it is advantageous to manufacture the product at home. So long as the threshold is being reached, it pays to import the product. When the threshold is reached, Hirschman suggests subsidies or protection to import-replacing industries. But it is not desirable to give infant-industry protection till the industry has been fully established. Hirschman calls last stage industries as import enclave industries. They are different from export enclave industries. The latter produce only for exports and are primarily related to staple products and minerals in LDCs. According to Hirschman, LDCs do not give due importance to the part played by exports in their economic development. They often treat exports like a step child. Their exports do not expand and fail to produce forward linkage effects within the economy. Hirschman, therefore, suggests export promotion which is the only practical way of achieving industrialisation via import substitution.

Hirschman sums up his "Strategy of Economic Development" in these words, "Economic development typically follows a path of uneven growth; that balance is restored as a result of pressures, incentives, and compulsions, that the efficient path towards economic development is apt to be somewhat disorderly and that it will be strewn with bottlenecks and shortages of skills, facilities, services, and products, that industrial development will proceed largely through backward linkage, i.e., will work its way from the 'last touches' to intermediate and basic industry."

A Critical Appraisal

The doctrine of unbalanced growth, as propounded by Hirschman, is a heroic attempt at pointing out the way to accelerated economic development for underdeveloped countries. It is realistic and takes into account almost all aspects of development planning. The various incentives, obstacles and resistances to development are studied in their proper perspective. The discussion of forward and backward linkage effects together with last stage production is highly useful. Hirschman's stress on export promotion and import substitution further introduces a touch of realism. He is neither in favour of overall state planning of the Russian type nor does he leave everything on the shoulders of private enterprise. Unless the SOC path of economic development is followed by the state, it will not encourage private investment in DPA, for private enterprise in an underdeveloped country is unable to create the necessary economic surplus required for development, to carry it further and even to sustain losses. He, therefore, appears to be in favour of a mixed economy.

Its Limitations

The doctrine of unbalanced growth is, however, not free from certain limitations.

1. Inadequate Attention to the Composition, Direction and Timing of Unbalanced Growth. Paul Streeten criticising Hirschman's theory of unbalanced growth asks, "The crucial question is not whether to create imbalance, but what is the optimum degree of imbalance, where to imbalance and *how much* in order to accelerate growth; which are the 'growing points,' where should the spearhead be thrust, on which slope snowballs grow into avalanches." He thus points out that inadequate attention has been paid to the composition, direction and timing of unbalanced growth.

2. Neglects Resistances. Streeten further points out that "the theory concentrates on stimuli to expansion and tends to neglect or minimize resistances caused by unbalanced growth." For instance, Hirschman neglects resistances in attitudes created by an imbalance. When development is the outcome of deliberate unbalancing the economy, the business attitudes change due to shortages and tensions, and there is lot of opposition and hostility. Hirschman neglects this type of reaction on the part of the existing institutions in underdeveloped countries.

3. Beyond the Capabilities of Underdeveloped Countries. Hirschman's criticism of Nurkse's doctrine of balanced growth that it "combines a defeatist attitude toward the capabilities of underdeveloped economies with completely unrealistic expectations about their creative abilities" applies equally to his own theory. Investment creates imbalances thereby creating pressures and tensions in the growth process which are overcome by the inducement mechanism. But pressures and tensions are bound to be serious in underdeveloped countries thereby hampering the process of development.

4. Lack of Basic Facilities. There may be lots of difficulties in procuring technical personnel, raw materials, and basic facilities like power and transport and even in finding out an adequate domestic or foreign market for the products.

5. Lack of Factor Mobility. Moreover, inducement mechanism is practicable where there is internal *flexibility* of resources. But in underdeveloped countries it is difficult, nay impossible, to shift resources from one sector to another.

6. Emergence of Inflationary Pressures. One of the serious limitations of the unbalanced growth doctrine is the development of *inflationary* pressure within the economy. When large doses of investment are being injected into the economy at certain strategic points, income will rise which may tend to increase the demand for consumer goods relative to their supply. Shortages arise due to strains, pressures and tensions. Such

a situation leads to inflationary rise in the price level. It becomes difficult to control prices in underdeveloped countries, as the governments are incapable of wielding monetary and fiscal measures effectively.

7. Linkage Effects not Based on Data. Hirschman's analysis of the "linkage effects" suffers from the fact that it is not based on data pertaining to an underdeveloped country where social overhead facilities are not fully developed for a generation or so.

8. Too much Emphasis on Investment Decisions. Hirschman's development strategy is largely related to maximising investment decisions. No doubt decision making is a crucial factor in economic development, yet underdeveloped countries need not only investment decisions but also administrative, managerial and policy decisions. Thus Hirschman lays too much emphasis on investment decisions as compared to other important decisions essential for development.

Conclusion. Despite these weaknesses the technique of unbalanced growth has come to be recognised as a novel technique for the development of underdeveloped countries. Russia was the first country to adopt it and has been successful in accelerating its rate of economic growth within a short-period of time. India has also followed suit by adopting this technique with the Second Five-Year Plan. Whereas Russia could succeed by creating large surpluses in the heavy industries sector and by keeping down the consumption levels, in India such an extreme policy is impracticable. Here investments in heavy industries are being kept up at a high level in the five-year plans and at the same time every effort is being made to step up production of consumer goods. But nothing is done to keep the consumption levels low in order to generate large economic surplus. The continuous rise in the price level however tends to keep the real consumption standards low. Unless the government controls the inflationary pressure, planning with unbalanced growth will fail to achieve the goal of self-sustaining growth.

BALANCED VS. UNBALANCED GROWTH

Having examined critically the doctrines of balanced and unbalanced growth, we attempt an overview of these strategies of economic development.

The case for balanced growth rests on the fact that vicious circles of poverty are at work in underdeveloped countries which are responsible for the small size of the local market for their goods. The solution lies in a balanced pattern of investment in a number of mutually supporting different industries so that the size of the market is enlarged.³

³For more details refer to the previous chapter.

Its critics argue that an underdeveloped country does not possess sufficient resources in men, materials and money for simultaneous investments in a number of complementary industries. Another serious weakness of this doctrine is that it emphasises the complementarity of markets for final goods, primarily consumer goods, as an inducement to invest and leaves out intermediate goods markets.

Proponents of unbalanced growth strategy favour investments in selected sectors rather than simultaneously in all sectors of the economy. Investments in selected sectors lead to new investment opportunities. This is possible by deliberately unbalancing the economy. The aim is to keep alive rather than eliminate the disequilibria by maintaining tensions, disproportions and disequilibria.

The strategy of unbalanced growth aims at removing scarcities in underdeveloped countries by induced investment decision-making. Critics point out that in such countries decision-making itself is scarce along with other resources. Moreover, creating imbalances within the economy by making investments in strategic sectors in the face of acute shortage of resources leads to inflationary pressures and balance of payments difficulties in underdeveloped countries.

Despite these differences in approaches, the doctrines of balanced and unbalanced growth have two common problems: one, relating to the role of the state, and two, the role of supply limitations and supply inelasticities.

Nurkse believes that balanced growth is relevant primarily to a private enterprise system. "It is private investment that is attracted by markets and that needs the inducement of growing markets. It is here that the element of mutual support is so useful and, for rapid growth, indispensable." But critics point out that private enterprise alone is incapable of taking investment decisions in underdeveloped countries. Therefore, balanced growth presupposes planning.

On the other hand, in Hirschman's unbalanced growth strategy, the state plays an important role in encouraging SOC investments thereby creating disequilibria. If development starts via investment in DPA, political pressures force the state to undertake investments in SOC. Thus unbalanced growth also requires state planning.

Since both balanced growth and unbalanced growth involve lumpy investments in complementary activities, they require state planning. In order to get investment decisions implemented and to benefit from complementarities, coordination between the private and public sectors is essential in an underdeveloped country, whether it adopts the strategy of balanced growth or unbalanced growth.

The other problem concerning the two strategies is the role of supply limitations and supply inelasticities. Nurkse's theory of balanced growth

is mainly related to the lack of demand, and neglects the role of supply limitations. This is not a correct view because underdeveloped countries woefully lack in the supply of capital, skills, economic infrastructure and other resources which are inelastic in supply. While the demand for final goods can be created by import restrictions and export promotion without recourse to the strategy of balanced growth.

The unbalanced doctrine also neglects the role of supply limitations and supply inelasticities. Though it emphasises the scarcity of decision-making, yet it ignores the scarcity of physical, human and financial resources in an underdeveloped country.

Thus both strategies err in neglecting supply limitations and base their arguments on 'ceilingless economies' of the developed countries which have high elasticity of supply of resources.

This distinction between balanced and unbalanced growth techniques leads to certain points of similarities between the two. First, both believe in the existence of a private enterprise system based on market mechanism under which they operate. At the same time, they imply the operation of state planning. Second, both ignore the role of supply limitations and supply inelasticities. Last but not the least, both the doctrines assume interdependence, but of different degrees. In balanced growth the development of one sector is dependent on the development of other sectors. On the other hand, under unbalanced growth the economy gradually moves on the path of economic development via tensions, disproportions and disequilibria, and ultimately reaches balanced growth. Thus both the strategies involve interdependence among different sectors of the economy, but the interdependence is of different degrees.

The controversy between balanced and unbalanced growth has been stretched too far and has become almost barren. Keeping in view the scarcity of resources in a developing country, the best course is to adopt the strategy of unbalanced growth. Under this strategy, SOC should be developed first which will encourage subsequent investments in DPA when the economy will ultimately move on the path to balanced growth. The experience of many developing countries like India reveals that unless such SOCs as power, irrigation, manpower, transport, etc. are developed first, the development of agriculture, industry and commerce is retarded. The rapid development of Russia has of course proceeded in this way with growth being communicated from the leading to the followers. But developing countries wedded to democracy should try to control the twin evils of inflation and adverse balance of payments while pursuing this strategy of development.

Chapter 23

DUALISTIC THEORIES

SOCIAL DUALISM

J.H. Boeke,¹ a Dutch economist, has been one of the pioneers who developed a distinctive theory applicable only to underdeveloped countries. His theory of "social dualism" is a general theory of economic and social development of underdeveloped economies based primarily on his studies of the Indonesian economy.

Meaning. Dr. Boeke maintains that there are three characteristics of a society in the economic sense. They are the social spirit, the organizational forms and the technique dominating it. Their interdependence and interrelation are called the social system or social style. A society is homogeneous where only one social system prevails. But a society may have two or more social systems simultaneously. It is then a dual or plural society. Boeke reserves the term "dual society" for "societies showing a distinct cleavage of two synchronic and full grown social styles which in the normal, historical evolution of homogeneous societies are separated from each other by transitional forms, as, for instance, pre-capitalism and high capitalism by early capitalism."² Such a dual society is characterized by the existence of an advanced imported western system and an indigenous precapitalist agricultural system.

The former is under western influence and supervision, which uses advanced techniques and where the average standard of living is high. The latter is native with low levels of technique, economic and social welfare. Boeke calls it "social dualism" and defines it as "the clashing of an imported social system with an indigenous social system of another style. Most frequently the imported social system is high capitalism. But it may be socialism or communism just as well, or a blending of them."³

Characteristics of Dualistic Society. Boeke gives the economic theory of a dualistic society "to describe and to explain the economic interactions of two clashing social systems," which he terms 'dualistic

¹J.H. Boeke, *Economics and Economic Policy of Dual Societies*, 1953; 'Three Forms of Disintegration in Dual Societies,' *Indonesia*, April 1954; and 'Western Influence on the Growth of Eastern Population,' *Economics Internationale*, May 1954.

²*Op. cit.*, p. 3.

³*Ibid.*, p. 4.

economics' or 'eastern economics.' He bases his theory largely on the Indonesian experience.

There are certain characteristics of the *eastern sector* of a dualistic economy which distinguish it from a western society. The needs of an eastern society are limited. People are satisfied when their immediate needs are met. "When the price of coconut is high the chances are that less of the commodities will be offered for sale; when wages are raised the manager of the estate risks that less of the work will be done; if three acres are enough to supply the needs of the household a cultivator will not till six; when rubber prices fall the owner of a grove may decide to tap more intensively, whereas high prices may mean that he leaves a larger or smaller portion of tapable trees untapped."⁴ This is because people are influenced more by social rather than economic needs. Goods are evaluated according to their prestige value rather than value-in-use. It is, therefore, not surprising that eastern economies are characterized by backward-sloping supply curves of effort and risk-taking.

Native industry has practically no organization, is without capital, technically helpless and ignorant of the market. People indulge more in speculative activities rather than in regular profit-giving enterprises. They do not believe in capital investments attended by risks. They lack initiative and organizational skill characteristic of the western sector of a dual society. They are fatalists and hesitate to use modern technology. Labour is "unorganized, passive, silent, casual" and unskilled. People are reluctant to leave the village community. Migration within the country and immigration take place through state intervention. Urban development takes place at the cost of rural life. Export is the main objective of foreign trade in eastern society as distinct from a western society where it is the only means which makes imports possible.

Inapplicability of Western Economic Theory. These distinctive features of an eastern society make western economic theory totally inapplicable to underdeveloped economies. According to Boeke, western economic theory is meant to explain capitalistic society, whereas the eastern society is pre-capitalistic. The former is based on unlimited wants, a money economy, and different types of cooperative organisations. Moreover, it is wrong to apply the marginal productivity theory of distribution to explain the allocation of resources or the distribution of income in an underdeveloped economy because of the immobility of resources in such a society. Boeke, therefore, warns that "we shall do well not to try to transplant the tender, delicate hot-house plants of western theory to tropical soil, where an early death awaits

⁴Ibid., p. 40

them."⁵ Thus it is not possible to apply the same policy for the whole economy because what is beneficial for one society may be harmful for the other.

Since eastern economies are dualistic in character, any effort to develop their pre-capitalistic agriculture along western lines will prove not only abortive but may also cause retrogression. Change in the mental attitudes of farmers is essential for the introduction of modern agricultural techniques, otherwise the increase in wealth following them will result in the further growth of population. If, however, western technology fails the result will be increased indebtedness. Therefore, their existing agricultural system should not be disturbed, for it could hardly be improved upon.

In the industrial field, the eastern producer cannot adapt himself to his western counterpart "technologically, economically or socially." If the former tries to imitate the latter, he will suffer in doing so. In support of his argument, Boeke cites the Indonesian case where the adoption of western technology to industrialize the Indonesian economy has moved the goal of self-sufficiency farther and ruined its small industry.

Boeke refers to five kinds of unemployment in underdeveloped countries: seasonal, casual, unemployment of regular workers, unemployment of the white collared, and unemployment of Eurasians. He believes that "it is not within the power of the government to remove them as it would entail a financial burden far beyond the government's means."

In underdeveloped countries, limited wants and limited purchasing power hamper all economic development. Increase in food supply or industrial goods will bring a glut of commodities in the markets with the consequent fall in prices and to depression. This does not mean that Boeke is averse to all industrialization and agricultural improvements. Rather, he is in favour of a slow process of industrialization and agricultural development on a small scale, adapted to the dualistic structure of eastern society. The urge for development should come from the people themselves. New leaders must emerge who should work towards the goal of economic development with faith, charity and patience.⁶

A Critical Appraisal

Boeke's theory of dualistic development has been severely criticised by Professor Benjamin Higgins⁷ on the following grounds:

⁵Ibid., p. 143.

⁶Boeke, *Western Influence on the Growth of Eastern Population*, pp. 366-69.

⁷B. Higgins, "The Dualistic Theory of Underdeveloped Areas," *Economic Development and Cultural Change*, January 1956.

1. Wants not Limited. Boeke's contention that people in underdeveloped economies have limited wants or backward-sloping supply curves of effort and risk-taking is not borne out by the experience of Indonesia itself. Both the marginal propensity to consume and to import are high there. People do not have limited needs, rather there is a great demand for both domestic and imported semi-luxuries. To restrict their demand the Indonesian Government have to impose import restrictions. This is not peculiar to Indonesia alone. Even the Indian authorities have adopted rigorous import and exchange controls to restrict the illegal inflow of semi-luxuries. A good harvest in India results in a spate of orders for radios, transistors, bicycles, watches, etc.

2. Casual Labour not Unorganised. Boeke's characterization of the eastern casual worker as unorganized, passive, and silent is "inconsistent with the growing strength of organised labour in Indonesia, India and elsewhere." Casual labour may not be fully organised in agriculture but in tea, coffee, and rubber plantations the trade union movement is the strongest in such economies.

3. Eastern Labour not Immobile. It is not possible to accept Boeke's view that people in eastern economies are reluctant to leave their village communities. In fact, city life, with all its attractions like cinemas, shops, cafes, and sports events, has always led to migrations from rural areas. Congestion, unemployment and inadequate basic amenities found in larger towns are in turn the consequence of the latter. Further, income incentives also lead to the movement of labour from one plantation to the other and even of casual workers from factories to rural areas during the harvesting season. Higgins opines that "I see no evidence that Oriental labour is 'intrinsically' more immobile than western labour."

4. Not Peculiar to Underdeveloped Economies. Boeke ascribes his dualistic theory only to eastern economies though he himself admits that social dualism also exists in underdeveloped economies of Africa and Latin America. But it is not peculiar to underdeveloped areas only. It exists in Italy, Canada and even in the United States. Rather every economy "can be divided into distinct regions, with different degrees of technological advance."

5. Applicable to Western Societies. Many of the specific characteristics of the eastern society described by Boeke, seem to Higgins to be attributable to western societies as well. Whenever chronic inflation exists or threatens western economies, people prefer speculative profit to long-term investments. "Western economists," according to Higgins, "have recently developed a whole field of analysis relating to 'liquidity preference' and 'safety-preference,' to take account of the reluctance of investors the world over to accept risk or illiquidity, and their strong preference for keeping their capital in safe and liquid form."

Further, Boeke's contention that people in eastern economies buy

goods for *prestige-value* attached to them rather than for use value is equally true in the case of western economies. Were it not so, the term "conspicuous consumption" would not have been coined by Veblen for the American society.

Even the *backward-sloping supply curve* of effort is not peculiar to eastern economies but was experienced by Australia during the post-war period and in the United States in the 1950's. Professor Higgins contends that "this backward-sloping supply curve...appears in any society which stagnates (or slows down) long enough to weaken the 'demonstration effect,' provided by people moving from one standard of living to another, as a result of their own extra effort, directed specifically towards earning additional income."

6. Not a Theory but Description. Dr Boeke fails to provide a distinctive economic and social theory for underdeveloped economies. His dualistic theory is merely a description of eastern society in which he tries to demonstrate the peculiar features of an eastern society that must not be developed on western lines. Boeke's contention that western economic theory is inapplicable to eastern societies is based on the neo-classical theory which has limited applicability even in the western world.

7. Tools of Western Economic Theory Used in Eastern Societies. Some of the tools of western economic theory underlying monetary and fiscal policies and those aimed at removing balance of payments disequilibrium are applicable to eastern societies with slight variations. Professor Higgins believes that the solution to the problem of underdevelopment can be found 'by applying familiar tools of economic and social analysis, within a model defined by appropriate institutional assumptions.'

8. Does not Provide Solution to the Problem of Unemployment. Boeke's dualism centres more on socio-cultural aspects rather than on economic. He regards unemployment of various types as "beyond the reach of government help," and makes no mention of underemployment which is a dominant feature of densely populated underdeveloped economies. This is a big lacuna in Boeke's dualistic theory.

Conclusion. In fact, the important problem in dualistic economies is one of providing adequate employment opportunities to the existing and prospective underemployed labour force. This has led to the development of the theory of technological dualism by Higgins which "looks to resource endowments and differences in the production functions in the two sectors as the basis of a 'technological dualism' which in turn has resulted in an inadequate number of openings for productive employment." This is a more realistic dualistic theory than Boeke's, for it analyses the effects of a dualistic society on the pattern of development.

TECHNOLOGICAL DUALISM

As an alternative to Boeke's social dualism, Professor Higgins⁸ has developed the theory of technological dualism. Technological dualism implies the use of different production functions in the advanced sector and the traditional sector of an underdeveloped economy. The existence of such dualism has accentuated the problem of structural or technological unemployment in the industrial sector and disguised unemployment in the rural sector. Higgin's theory of technological dualism incorporates the *factor proportions problem*⁹ as discussed by R.S Eckaus and is related to limited productive employment opportunities found in the two sectors of an underdeveloped economy because of market imperfections, different factor endowments and production functions.

In fact underdeveloped countries are characterized by structural disequilibrium at the factor level. "Disequilibrium at the factor level may arise either because a single factor receives different returns in different uses or because price relationships among factors are out of line with factor availabilities." Such disequilibrium leads to unemployment or underemployment in two ways in underdeveloped countries, according to Dr Eckaus. One, imperfections in or malfunctioning of the price system. Two, limitations in the existing technology or the structure of demand leading to surplus labour in densely populated backward countries. Thus technological unemployment in an underdeveloped country may refer to surplus labour arising from malallocation of resources, the structure of demand and technological restraints.

Higgins builds his theory around two goods, two factors of production and two sectors with their factor endowments and production functions. Of the two sectors, the industrial sector is engaged in plantations, mines, oil fields, refineries, or large scale industry. It is capital-intensive and is characterized by fixed technical coefficients. In other words, there is no technical substitutability of factors which are combined in fixed proportions. The rural sector is engaged in producing foodstuffs and handicrafts or very small industries. It has variable technical coefficients of production so that it can produce the same output with a wide range of techniques and alternative combinations of labour and capital (including improved land).

The production function in the industrial sector is represented in Fig. 23.1. Units of labour are measured on the horizontal axis, and units of capital on the vertical axis.

⁸B. Higgins, *Economic Development*, pp. 325-33.

⁹R.S. Eckaus, "The Factor Proportions Problem in Underdeveloped Areas," in Aggarwal and Singh (ed.), *op. cit.*

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⁸B. Higgins, *Economic Development*, pp. 325-33.

⁹R S Eckaus, "The Factor Proportions Problem in Underdeveloped Areas," in Aggarwal and Singh (ed.), *op. cit.*

The curve Q_1 is an isoquant representing combination of OK of capital and OL of labour producing a certain level of output.

The curves Q_2 , Q_3 and Q_4 represent higher levels of output which are only possible by increasing the units of capital and labour in the same proportions. Thus points A , B , C and D show fixed combinations of capital and labour used to produce different levels of output Q_1 , Q_2 , Q_3 , and Q_4 . The line OE joining these points is the expansion path of the industrial sector and its slope represents constant proportions of the two factors. The line K_1L_1 shows

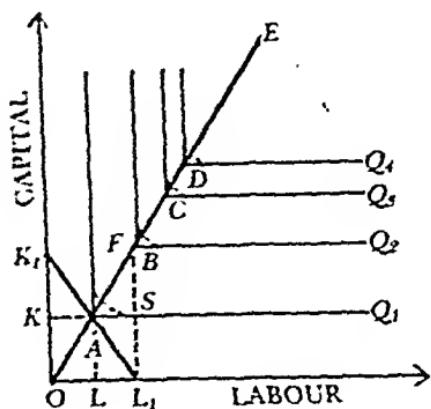


FIG. 23.1

that the production process is capital-intensive, more capital is required to produce a given output relatively to labour. To produce Q_1 output, OK units of capital and OL units of labour are used. If however, the actual factor endowment is at S instead of at A , it means that more labour units (OL_1) are available to produce the same Q_1 output, the units of available capital remaining the same (OK). Since there are fixed technical coefficients, the excess labour supply will not affect production techniques at all. LL_1 units of labour will remain unemployed. It is only when capital stock increases to SF that it is possible to absorb this excess labour supply in this sector, otherwise it will have to seek employment in the rural sector.

In reality, however, technical coefficients are not so rigidly fixed. Rather, they are somewhat flexible. The dotted curvature of the isoquants indicates the possibilities of some flexibility in factor proportions. It shows very small changes in factor endowments for which entrepreneurs would not like to make drastic changes in techniques of production. Thus they would prefer to have fixed technical coefficients.

The production function for the rural sector is shown in Fig. 23.2. The isoquant curves Q_1 , Q_2 , Q_3 and Q_4 show variable coefficients of production. In order to produce more output, more labour is employed in relation to capital (improved land). Ultimately good land becomes scarce and all available land is cultivated by highly labour-intensive techniques at point E where the maximum output level Q_n is reached.

Given the different production functions in the two sectors, Professor Higgins analyses the process whereby technological dualism has

been rapid technological progress in the industrial sector. This has tended to increase the number of the disguised unemployed. The situation is further aggravated by keeping wage rates artificially high by trade union activities or by government policy. For, high industrial wage rates relative to productivity provide an incentive to entrepreneurs for introducing labour-saving techniques and thereby diminish still further the capacity of the industrial sector to absorb surplus labour. Accordingly, these factors perpetuate the tendency toward technological dualism in underdeveloped countries.¹¹

A Critical Appraisal

Professor Higgins tries to present an historical evolution of the modern and traditional sectors leading to a steady rise in underemployment in the latter sector. Technological dualism appears to be superior to Bocke's social dualism. It is realistic for it takes into account how disguised unemployment gradually arises in the rural sector of the dualistic societies.

Its Defects—But the theory is not without limitations.

1. **Coefficients not Fixed In Industrial Sector.** Whereas production has taken place with variable technical coefficient in the rural sector, it is doubtful that production in the industrial sector has been actually carried on with fixed coefficients. It is improper to assume fixed technical coefficients in the industrial sector without any empirical verification.

2. **Factor Prices do not Depend upon Factor Endowments.** This theory indicates why factor endowments and different production functions have led to the rise of disguised unemployment in the rural sector. This is vitally connected with the pattern of factor prices. But factor prices do not solely depend on factor endowments.

3. **Neglects Institutional Factors.** Moreover, there are many institutional and psychological factors that also influence factor proportions which have been neglected by Higgins.

4. **Neglects the Use of Labour Absorbing Techniques.** Further, Higgins' contention that highly capital-intensive processes are imported for use in the industrial sector altogether neglects the use of other techniques that are labour absorbing. All imported techniques are not labour-saving. For instance, the Japanese agricultural development cannot be attributed to the use of capital-intensive techniques. Rather, it was due to the application of better seeds, improved methods of cultivation, increasing use of fertilizers, etc.

5. **Size and Nature of Disguised Unemployment not Clarified.** Higgins

¹¹Ibid., p. 330

to increase unemployment and disguised unemployment in the economies. Of the two sectors, the industrial sector develops and grows with the aid of foreign capital. Thus industrialization leads to growth of population much in excess of the rate of capital accumulation in the industrial sector. Since this sector uses capital-intensive techniques and fixed technical coefficients, it is not in a position to create employment opportunities at the same rate at which population grows. Rather industrialization may even bring a relative decline in the proportion of total employment in that sector.¹ Thus the surplus labour has no other alternative except to seek employment in the rural sector.

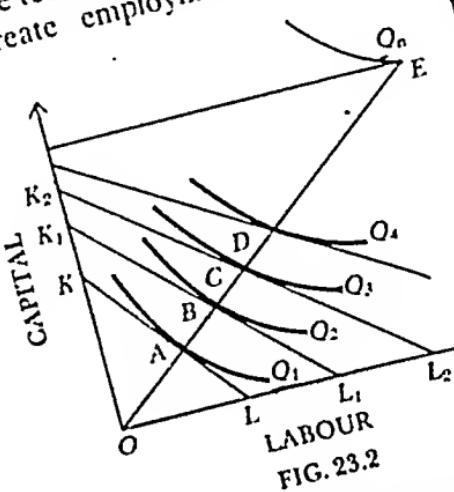


FIG. 23.2

Before the start of the expansion process, the rural sector has neither an abundance nor scarcity of factors of production. In the beginning, it may be possible to absorb the additional labour force by bringing more land under cultivation. This leads to the optimal combinations of labour and capital (improved land) as output increases. Eventually, good land becomes scarce. The ratio of labour to capital available in that sector rises steadily and since technical coefficients are available, techniques become increasingly variable in this sector. For example, in many Asian countries, irrigated rice cultivation has substituted for shifting dry rice cultivation. Ultimately, all available land is cultivated by highly labour-intensive techniques. Ultimately, all available productivity of labour declines to zero or even below zero. Thus continuing growth of population, disguised unemployment begins to appear. Under these circumstances, farmers have no incentive either to invest more capital or to introduce labour-saving technique. As a result, techniques of production to increase the output per man, there is no available technique to increase man-hour productivity and economic welfare remain at a low level in the rural sector.

In the long run, technological progress does not help in reducing disguised unemployment. Rather, it tends to augment it. Higgins contends that during the last two centuries little technological progress has occurred in the rural sector while

does not clarify the nature of disguised unemployment in the rural sector and excess labour supply in the industrial sector. Nor does he refer to the actual extent of the disguised unemployed resulting from technological dualism.

FINANCIAL DUALISM

Professor Myint¹² has developed the theory of financial dualism. Financial dualism refers to the co-existence of different interest rates between the organised and unorganised money markets in the LDCs. The rate of interest in the unorganised money market in the traditional sector is much higher than the rate in the organised money market in the modern sector.

The unorganised money market consists of the non-institutional lenders, such as the village money-lenders, landlords, shopkeepers, traders or the combination of some of them. They charge very high interest rates on loans. The main reason is that there is a real shortage of savings in the traditional sector as substantial amount of savings is hoarded in gold and jewellery. Even though risks and costs of lending money to a large number of small borrowers are very high, yet there are other contributory factors arising from imperfections in this unorganised money market. The village shopkeepers, landlords, money-lenders and traders occupy strategic positions in the village economy and create monopoly powers over the peasants. These arise because of personal and informal dealings with borrowers, flexibility in loan transactions, and blending of money-lending with other types of activities such as selling of goods. "The high rates of interest which the peasants have to pay are not only formal interest charges but also in considerable part concealed charges obtained through manipulating the prices of the commodities which the peasants buy or sell. Concealed charges may take the form of very high prices for goods on credit terms at the local shop or the obligation to repay the landlord the loans advanced with a specified amount of the crop at harvest."

On the other hand, in the organised money market of the LDCs, the interest rates are low and credit facilities are abundant. The organised money market consists of the commercial banks and other financial institutions which lend short-term credit at low interest rates to the modern business sector consisting of the big foreign-owned enterprises in the export industries, the government and the larger-scale modern manufacturing enterprises. Myint points toward two differences

¹² H. Myint, *Economic Theory and the Underdeveloped Countries*, 1971 and *The Economics of the Developing Countries*, 5'e., 1980

tended to increase unemployment and disguised unemployment in the dual economies. Of the two sectors, the industrial sector develops and expands with the aid of foreign capital. Thus industrialization leads to the growth of population much in excess of the rate of capital accumulation in the industrial sector. Since this sector uses capital-intensive techniques and fixed technical coefficients, it is not in a position to create employment opportunities at the same rate at which

population grows. Rather industrialization may even bring 'a relative decline in the proportion of total employment in that sector.' Thus the surplus labour has no other alternative except to seek employment in the rural sector.

Before the start of the expansion process, the rural sector has neither an abundance nor scarcity of factors of production. In the beginning, it may be possible to absorb the additional labour

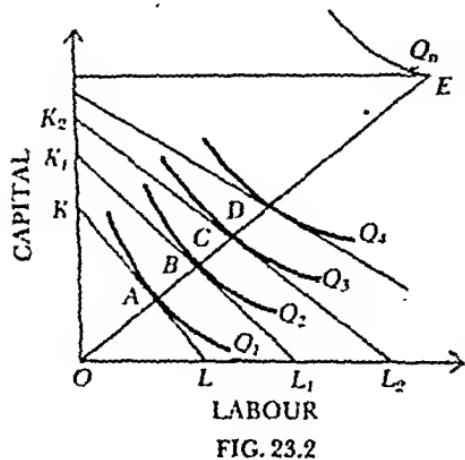


FIG. 23.2

force by bringing more land under cultivation. This leads to the optimal combinations of labour and capital (improved land) as output increases. Eventually, good land becomes scarce. The ratio of labour to capital available in that sector rises steadily and since technical coefficients are available, techniques become increasingly variable in this sector. For example, in many Asian countries, irrigated rice cultivation has been substituted for shifting dry rice cultivation. Ultimately, all available land is cultivated by highly labour-intensive techniques and the marginal productivity of labour declines to zero or even below zero. Thus with continuing growth of population, disguised unemployment begins to appear. Under these circumstances, farmers have no incentive either to invest more capital or to introduce labour-saving technique. Besides, there is no available techniques to increase the output per man, and no incentive on the part of labour to raise production by themselves. As a result, techniques of production, man-hour productivity and socio-economic welfare remain at a low level in the rural sector.¹⁰

In the long run, technological progress does not help in removing disguised unemployment. Rather, it tends to augment it. Professor Higgins contends that during the last two centuries little or no technological progress has occurred in the rural sector while there has

¹⁰B. Higgins, *op. cit.*, p. 329.

modern industrial sector. This has reduced the supply of capital to the traditional small industries and the agricultural sector which have to get it at higher interest rates.

Further, the imposition of controls on foreign exchange and imports to correct the adverse balance of payments have benefitted the modern industrial sector as against the traditional sector. The modern sector is usually allocated the major portion of the available foreign exchange and the manufacturing industries are encouraged to adopt highly capital-intensive methods of production because the imported capital goods are obtained cheaply at the overvalued exchange rates. Thus there is a strong incentive to substitute cheaper imported capital goods for domestic labour.

The agricultural and small-scale sectors suffer from the foreign exchange and import controls on two counts: first, they get imported consumer goods at high prices, and second, they fail to obtain the foreign exchange and import permits easily because of red-tapism and corruption prevailing in the LDCs.

The traditional sector also suffers because the government expenditure on public services favours the urban centres as against the rural areas. Public services like transport, communications and electric power are available more readily and at favourable terms to the modern industrial sector than to the traditional sector.

The governments in some of the LDCs have tried to improve credit facilities in the traditional sector by establishing agricultural banks and cooperative credit societies and by passing usury laws. But these tend to take the form of supplying a limited amount of subsidised loans through the cooperative societies to some highly favoured 'model villages'. These seemingly impressive 'show pieces' however have no effect on lowering the high rates of interest which prevail in the rest of the traditional sector."

All this has led to the malallocation of resources between the modern and the traditional sectors and to the obstruction of the development of an integrated domestic capital market in the LDCs. With the multiplicity of government controls, the free market for credit has developed into the black market. Domestic inflation along with overvalued exchange rates have led to the speculative flights of capital abroad. In countries which have tried to stop this, the capital funds have been channelised into the purchase of gold, jewellery, real estate and into speculative activities. This is because of the cheap money policy which offers low interest rates to the holders of funds for investment purposes. This stands in the way of the growth of an effective capital market.

Government controls over the scarce supply of capital have also

between the old financial dualism which existed in the open economy of the colonial period and the new financial dualism which now exists in the closed economy of the LDCs following domestic industrialisation policies. First, under the colonial system, the currency system was automatic and ensured free convertibility at fixed exchange rates. Consequently, there was no shortage of foreign exchange and no balance of payments problem. But the present LDCs are faced with chronic domestic inflation and balance of payments difficulties. As a result, small business units such as peasants, small traders, handicraft producers, etc. in the traditional sector have to face not only high interest rates but also inaccessibility to foreign exchange and imports. Second, under the colonial system, the organised money market of the LDCs consisted of the branches of western commercial banks which were linked with the international financial market. The modern sector in the colonial system consisting of the mines, plantations and foreign trading enterprises could borrow at low interest rates both from the commercial banks and from the world capital markets. But the present LDCs have attained monetary independence with the establishment of their own central banks. They have introduced foreign exchange controls and have restricted profit remittances and transfer of funds by foreign commercial banks. As a result, the organised money market of the LDCs has been separated from the world capital market. Coupled with this, they have been following cheap money policy. This has led to the paradoxical situation in which the central banks in the capital-scarce LDCs are maintaining low interest rates than those prevailing in the capital-rich developed countries thereby overvaluing their exchange rates. They fear that devaluation will lead to repeated devaluation of their currencies and to inflationary pressures.

Further, the LDCs are faced with inflationary pressures, declining foreign exchange reserves and balance of payments pressures. Thus there is a chronic excess demand for foreign exchange at the overvalued exchange rates. To overcome this, they have concentrated on foreign exchange and import control and on monetary and fiscal measures and direct controls.

This had led to the aggravation of the economic dualism between the traditional sector and the modern industrial sector. These fiscal and monetary policies have tended to favour the modern industrial sector as against the traditional sector. The cheap money policy by maintaining an artificially low interest rates has made credit available to large industrial concerns at favourable terms. The low interest rates have discouraged the flow of capital funds from abroad and savings from within the country, but have created an excess demand for loans. Thus the bulk of domestic savings at low interest rates

modern industrial sector. This has reduced the supply of capital to the traditional small industries and the agricultural sector which have to get it at higher interest rates.

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Government controls over the scarce supply of capital have also

retarded the growth of financial intermediaries in the LDCs. These controls favour the large manufacturing units and banks. And they discriminate against the small borrowers and the money-lenders who provide credit to the small borrowers. The government believes that capital funds invested only in durable capital goods and modern machinery are productive, while those invested in financing agriculture and trading activities are unproductive.

According to Myint, the efforts made to control the activities of the money-lenders and to provide cheap and easy credit in the traditional sector through commercial banks and cooperative credit societies have failed due to (a) the high overhead costs and salaries of the officials of the commercial banks in rural areas; (b) the red-tapism in dealing with small borrowers according to the rigid rules of credit worthiness; (c) the lack of coordination between the head office and branches; and (d) the supply of limited amounts of subsidised loans through cooperative credit societies to some favoured parts of the rural sector.

Further, credit discrimination against trading activities also stands in the way of the development of an integrated capital market in the LDCs. Due to the non-availability of sufficient capital funds and high costs of holding stocks, the traders have to hold a much lower level of stocks of commodities and circulating capital. As a result, the wholesale and retail prices are widened.

Professor Myint suggests two types of policies to reduce financial dualism in the LDCs. First, such countries should raise the official interest rates in their organised credit markets high enough to reflect their existing shortage of capital funds. This would encourage the growth of an integrated domestic capital market which can effectively attract savings from within the country and from abroad. It would also help to equate the available supply of savings to the demand for loans including the demand for funds by the money-lenders to be re-lent to the unorganised credit market. Second, to create a more integrated domestic capital market, free access on equal terms to capital funds should be provided both to the modern and traditional sectors. This would also reduce the malallocation of resources between the two sectors. The interest rates in the traditional sector should be reduced by providing unlimited access to credit funds on equal terms both to the cooperatives and the money-lenders so that they can compete to lower the interest rates for the small borrowers.

Chapter 24

MYRDAL'S THEORY OF CIRCULAR CAUSATION

INTRODUCTION

Professor Gunnar Myrdal maintains that economic development results in a circular causation process whereby the rich are awarded more favours and the efforts to those who lag behind are thwarted. The backwash effects predominate and the spread effects are damped. This tends cumulatively to accentuate international inequalities and also leads to regional inequalities within the underdeveloped countries.

In underdeveloped countries a *circular and cumulative process*, also known as the 'vicious circle of poverty,' operates downwards and being unregulated causes increasing inequalities. Myrdal believes that 'our inherited theoretical approach' is inadequate to solve the problem of economic inequalities. "The theory of international trade and, indeed, economic theory generally were never worked out to serve the purpose of explaining the reality of economic underdevelopment and development."¹ The reason is that the traditional economic theory is based on the unrealistic assumption of stable equilibrium. Professor Myrdal believes that it is wrong to apply the notion of stable equilibrium for constructing a theory to explain the changes in a social system. If, however, we persist in applying the stable equilibrium analysis, then "a change will regularly call forth a reaction in the system in the form of changes which on the whole go in the opposite direction to the first change."² "The idea I want to expound in this book," writes Myrdal, "is that, on the contrary, in the normal case there is no such tendency towards automatic self-stabilisation in the social system. The system is not by itself moving towards any sort of balance between forces, but is constantly on the move away from such a situation. In the normal case a change does not call forth countervailing changes but, instead, supporting changes, which move the system in the same direction as the first change but much further. Because of such circular causation a social process tends to become cumulative and often to gather speed at an accelerating rate."³

¹G. Myrdal, *Economic Theory and Underdeveloped Regions*, 1957

²Ibid., p. 13

³Ibid.

Another unrealistic assumption which is closely related to the stable equilibrium approach is the economic factors. The classical economic theory had its principal shortcoming in disregarding the non-economic factors which "are among the main vehicles for the circular causation in the cumulative processes of economic change." It was due to these two unrealistic assumptions that the traditional theory failed to state the dynamic problems of economic underdevelopment and development.

THE MYRDAL THESIS

Professor Myrdal builds his theory of economic underdevelopment and development around the idea of regional inequalities on the *national* and *international* planes. To explain it, he uses the notions of "backwash" and "spread" effects. He defines *backwash effects* as "all relevant adverse changes . . . of economic expansion in a locality . . . caused outside that locality. I include under this label the effects via migration, capital movements and trade as well as the total cumulated effects resulting from the process of circular causation between all the factors, "non-economic" as well as "economic." The *spread effects* refer to certain centrifugal "spread effects" of expansionary momentum from the centres of economic expansion to other regions." The main cause of regional inequalities, according to Myrdal, has been the strong backwash effects and the weak spread effects in underdeveloped countries. We first analyse below the principal forces responsible for this phenomenon at the national level and then at the international level.

(a) Regional Inequalities

The genesis of regional inequalities within a country has a non-economic basis. It is associated with the capitalist system which is guided by the profit motive. The profit motive results in the development of those regions where the expectations of profits are high while other regions remain underdeveloped. Professor Myrdal attributes this phenomenon to the free play of market forces which tends to increase rather than decrease regional inequalities. He says, "If things were left to market forces unhampered by any policy interferences, industrial production, commerce, banking, insurance, shipping, and indeed, almost all those economic activities which in a developing economy tend to give a bigger than average return—and, in addition, science, art, literature, education and high culture generally—would cluster in certain localities and regions, leaving the rest of the country more or less in a backwater."⁴ In this way, regional inequalities are accentuated

⁴*Ibid.*, p. 26.

when some localities grow at the expense of other regions, which stagnate.

The Backwash Effects of Migration, Capital Movement and Trade. Next, Myrdal analyses the backwash effects of migration, capital movements and trade on the backward regions.

The localities and regions where economic activity is expanding will attract young and active people from the other parts of the country. This will tend to favour the developing region and depress economic activity in the backward region, wherefrom such labour migrates.

Capital movements also tend to increase regional inequalities. In regions which are developed, increased demand will stimulate investment which, in turn, will increase incomes and demand, and lead to a second round of investment, and so on. The scope for better investment in the centres of expansion may create capital shortage in the backward regions. "Studies in many countries," writes Myrdal, "have shown how the banking system, if not regulated to act differently, tends to become an instrument for siphoning off the savings from the poorer regions to the richer and more progressive ones where returns on capital are high and secure."⁵

Similarly, trade operates with a fundamental bias in favour of the developed regions and in disfavour of the less developed regions. The development of industries in former regions may ruin the existing industries of the backward regions and the poorer regions remain mainly agricultural. According to Myrdal, "The freeing and widening of the markets will often confer such competitive advantages on the industries in established centres of expansion, which usually work under conditions of increasing returns, that even the handicrafts and industries existing earlier in the other regions are thwarted. . . As industrialisation is the dynamic force in this development, it is almost tautological to state that the poorer regions remain mainly agricultural. . . In these regions also, not only manufacturing industry and other non-agriculture pursuits but agricultural itself show a much lower level of productivity than in the richer regions."⁶

The Spread Effects. About the spread effects, Myrdal writes, "Against the backwash effects, there are, however, also certain centrifugal "spread effects" of expansionary momentum from the centres of economic expansion to other regions. It is natural that the whole region around a nodal centre of expansion should gain from the increasing outlets of agricultural products and be stimulated to technical

⁵Ibid., p. 28

⁶Ibid., pp. 28-29

advance all along the line.⁷ There will also be spread effects to localities producing raw materials for the growing industries in the centres and those having consumer goods industries will be stimulated. These will overcome the backwash effects from the older centres and encourage self-expansion of new centres. Similarly, the spread effects flowing from a centre of industrial expansion to other localities and regions, operating through increased demands for their products and in many other ways, weave themselves into the cumulating social process by circular causation.⁸

Backwash vs. Spread Effects. It is, however, not possible that the backwash effects and spread effects should be in equilibrium. In support of this, Professor Myrdal quotes two broad correlations from the studies of the United Nations Economic Commission for Europe: first, regional inequalities are much wider in the poorer than in the richer countries; and second, the regional inequalities are increasing in the poorer countries and diminishing in the richer countries. "A large part of the explanation for these two broad correlations may be found in the important fact that the higher the level of economic development that a country has already attained, the stronger the spread effects will usually be." Because the "development is accompanied by improved transportation and communications, higher levels of education and a more dynamic communion of ideas and values—all of which tend to strengthen the forces for the centrifugal spread of economic expansion or to remove the obstacles for its operation." As such economic development becomes an automatic process once a country has reached a high level of development. In contrast, the major cause of the backwardness of underdeveloped countries has been the weaker spread effects and stronger backwash effects whereby in the cumulative process "poverty becomes its own cause."

The Role of the State. National policies have tended to accentuate regional inequalities in poorer countries. The free play of market forces and the laissez-faire policy have been the two potent forces in creating regional inequalities in the presence of weaker spread effects. Other factors responsible for regional disparities in the poorer countries have been 'built-in feudal and other inequalitarian institutions and power structures which aid the rich in exploiting the poor.' The governments of underdeveloped countries should, therefore, adopt egalitarian policies to weaken the backwash effects and strengthen the spread effects in order to bridge regional inequalities and to strengthen the foundations for continuous economic progress. In the words of Myrdal, "A higher

⁷*Ibid.*, p. 31.

⁸*Ibid.*

level of development will strengthen the spread effects and tend to hamper the drift towards regional inequalities; this will sustain economic development, and at the same time, create more favourable conditions for policies directed at decreasing regional inequalities still further. The more effectively a national state becomes a welfare state... the stronger will be both the urge and the capacity to counteract the blind market forces which tend to result in regional inequalities; and this, again will spur economic development in the country, and so on and so on, in circular causation."

(b) International Inequalities

International trade may have strong backwash effects on the underdeveloped countries, according to Myrdal. At another place he writes, "Trade operates (as a rule) with a fundamental bias in favour of the richer and progressive regions (and continues) and in disfavour of the less developed countries."⁹ Unhampered trade between two countries of which one is industrial and the other underdeveloped, strengthens the former and impoverishes the latter. The rich countries have a large base of manufacturing industries with strong spread effects. By exporting their industrial products at cheap rates to underdeveloped countries, they have priced out the small-scale industry and handicrafts of the latter. This has tended to convert the backward countries into the producers of primary products for exports. The demand for primary products being inelastic in the export market, they suffer from excessive price fluctuations. As a result, they are unable to take advantage of either a fall or a rise in the world prices of their exports. The importing countries take advantage of the cheapening of their products because of the inelastic market for their exports. Similar advantages follow when there is any technological improvement in their export production. When the world prices of their products rise, they are again unable to benefit from it. Increased export earnings lead to inflationary pressures, malallocation of investment expenditure and balance of payments difficulties when they are wasted in speculation, conspicuous consumption, real estate, foreign exchange holdings, etc.

Capital movements have also failed to counteract international inequalities. Since advanced countries themselves offer to investors both goods, profits and security, capital will shun underdeveloped countries. Capital which flowed to underdeveloped countries under the colonial system was mainly directed towards primary production for exports. But it tended to affect their economies adversely through strong backwash effects. Whatever little was invested by the foreigners

⁹G. Myrdal, *Challenge to Affluence*, 1963.

in the form of roads, ports, railways, etc. was for political stability and economic profitability of the colonial government. International migration between underdeveloped and developed countries is no longer possible as a solution to the problem of international inequalities.

Thus unhampered trade and capital movements which have led to economic progress in advanced countries have produced strong backwash effects in the underdeveloped countries of the world. "Differences in legislation, administration and more generally, in language, in basic values and beliefs, in levels of living, production capacities, and facilities, make national boundaries much more effective barriers to the spread of expansionary momentum than any demarcation lines within one country can be . . . Even more important as impediments to the spread effects of expansionary momentum from abroad than the boundaries and everything they stand for are the very facts of great poverty and weak spread effects within the underdeveloped countries themselves . . . Basically, the weak spread effects as between countries are thus for the larger part only a reflection of the weak spread effects within the underdeveloped countries themselves caused by the low level of their development attained. In these circumstances market forces will tend cumulatively to accentuate international inequalities."¹⁰

A Critical Appraisal

The Myrdal thesis marks an important departure from the other theories of underdevelopment. He beautifully combines national and international forces which have tended to keep the underdeveloped countries of the world in the cumulative process where 'poverty becomes its own cause.' There is no denying the fact that in underdeveloped countries the spread effects are damped by the strong backwash effects. National and international forces tend to perpetuate them and thus accentuate regional and world inequalities. Moreover, the free play of market forces and unhampered trade have tended to cramp the export potential of such countries. As a result, a *Great Gap* has developed between imports and exports of underdeveloped countries which has made their economic development a costly and lengthy affair. Even empirical evidence indicates that the Myrdal thesis has been vindicated.

PART THREE

SOME GROWTH MODELS

Chapter 25

THE HARROD-DOMAR MODELS

The Harrod-Domar¹ models of economic growth are based on the experiences of advanced economies. They are primarily addressed to an advanced capitalist economy and attempt to analyse the requirements of steady growth in such economy.

Requirements of Steady Growth

Both Harrod and Domar are interested in discovering the rate of income growth necessary for a smooth and uninterrupted working of the economy. Though their models differ in details, yet they arrive at similar conclusions.

Harrod and Domar assign a key role to investment in the process of economic growth. But they lay emphasis on the dual character of investment. Firstly, it creates income, and secondly, it augments the productive capacity of the economy by increasing its capital stock. The former may be regarded as the 'demand effect' and the latter the 'supply effect' of investment. Hence so long as net investment is taking place, real income and output will continue to expand. However, for maintaining a full employment equilibrium level of income from year to year, it is necessary that both real income and output should expand at the same rate at which the productive capacity of the capital stock is expanding. Otherwise, any divergence between the two will lead to excess or idle capacity, thus forcing entrepreneurs to curtail their investment expenditures. Ultimately, it will adversely affect the economy by lowering incomes and employment in the subsequent periods and moving the economy off the equilibrium path of steady growth. Thus, if full employment is to be maintained in the long run, net investment should expand continuously. This further requires continuous growth in real income at a rate sufficient enough to ensure full

¹ F. R. Dornbusch, 'The Harrod-Domar Model: A Reinterpretation', in *Journal of Political Economy*, Vol. 68, No. 5, 1960, pp. 1000-1015; see also his *Dynamic Theory in Economics*, Oxford University Press, 1964, pp. 100-105. For a critical review of the Harrod-Domar model, see J. E. Meade, *Theory of Economic Growth*, Oxford University Press, 1957, see Chapters III and IV.

capacity use of a growing stock of capital. This required rate of income growth may be called the *warranted rate of growth* or "the full capacity growth rate."

Assumptions

The models constructed by Harrod and Domar are based on the following assumptions.

- (1) There is an initial full employment equilibrium level of income.
- (2) There is the absence of government interference.
- (3) These models operate in a closed economy which has no foreign trade.
- (4) There are no lags in adjustments between investment and creation of productive capacity.
- (5) The average propensity to save is equal to the marginal propensity to save.
- (6) The marginal propensity to save remains constant.
- (7) The capital coefficient, i.e., the ratio of capital stock to income is assumed to be fixed.
- (8) There is no depreciation of capital goods which are assumed to possess infinite life.
- (9) Saving and investment relate to the income of the same year.
- (10) The general price level is constant, i.e., the money income and the real income are the same.
- (11) There are no changes in interest rates.
- (12) There is a fixed proportion of capital and labour in the productive process.
- (13) Fixed and circulating capitals are lumped together under capital.

Lastly, there is only one type of product.

All these assumptions are not necessary for the final solution of the problem; nevertheless they serve the purpose of simplifying the analysis.

THE DOMAR MODEL

Domar builds his model around the following question: since investment generates income on the one hand and increases productive capacity on the other, *at what rate investment should increase in order to make the increase in income equal to the increase in productive capacity, so that full employment is maintained?*

He answers this question by forging a link between aggregate supply and aggregate demand through investment.

Increase in Productive Capacity. Domar explains the *supply* side like this. Let the annual rate of investment be I , and the annual productive

capacity per dollar of newly created capital be equal on the average to s (which represents the ratio of increase in real income or output to an increase in capital or is the reciprocal of the accelerator or the marginal capital-output ratio). Thus the productive capacity of I dollar invested will be $I.s$ dollars per year.

But some new investment will be at the expense of the old. It will, therefore, compete with the latter for labour markets and other factors of production. As a result, the output of old plants will be curtailed and the increase in the annual output (productive capacity) of the economy will be somewhat less than $I.s$. This can be indicated as $I\sigma$, where σ (sigma) represents the net potential social average productivity of investment ($= \Delta Y/I$). Accordingly $I\sigma$ is less than $I.s$. $I\sigma$ is the total net potential increase in output of the economy and is known as the sigma effect. In Domar's words this "is the increase in output which the economy can produce," it is the "supply side of our system."

Required Increase in Aggregate Demand. The demand side is explained by the Keynesian multiplier. Let the annual increase in income be denoted by ΔY and the increase in investment by ΔI and the propensity to save by α (alpha) ($= \Delta S/\Delta Y$). Then the increase in income will be equal to the multiplier ($1/\alpha$) times* the increase in investment.

$$\Delta Y = \Delta I \frac{1}{\alpha}$$

Equilibrium. To maintain full employment equilibrium level of income, aggregate demand should be equal to aggregate supply. Thus we arrive at the fundamental equation of the model.

$$\Delta I \frac{1}{\alpha} = I\sigma$$

Solving this equation by dividing both sides by I and multiplying by α we get:

$$\frac{\Delta I}{I} = \alpha\sigma^{**}$$

This equation shows that to maintain full employment the growth rate of net autonomous investment ($\Delta I/I$) must be equal to $\alpha\sigma$ (the MPS times the productivity of capital). This is the rate at which investment must grow to assure the use of potential capacity in order to maintain a steady growth rate of the economy at full employment.

Domar gives a numerical example to explain his point: Let $\sigma=25$ per cent per year, $\alpha=12$ per cent and $Y=150$ billion dollars per year. If full

*Since α is marginal propensity to save, $1/\alpha$ is the same as $1/(1-MPC)$

**If we multiply both sides by $1/\alpha$, then $\Delta I \frac{1}{\alpha} = I\sigma$ which is also equal to ΔY

employment is to be maintained, an amount equal to $150 \times 12/100 = 18$ billion dollars should be invested. This will raise productive capacity by the amount invested σ times, i.e., by $150 \times 12/100 \times 25/100 = 4.5$ billion dollars, and the national income will have to rise by the same amount. But the relative rise in income will equal the absolute increase divided by the income itself, i.e.,

$$150 \times \frac{12}{100} \times \frac{25}{100} = \frac{12}{100} \times \frac{25}{100} = \alpha\sigma = 3 \text{ per cent}$$

Thus in order to maintain full employment, income must grow at a rate of 3 per cent per annum. This is the equilibrium rate of growth. Any divergence from this 'golden path' will lead to cyclical fluctuations. When $\Delta I/I$ is greater than $\alpha\sigma$, the economy would experience boom and when $\Delta I/I$ is less than $\alpha\sigma$, it would suffer from depression.

The Harrod Model

Professor R.F. Harrod tries to show in his model how steady (i.e., equilibrium) growth may occur in the economy. Once the steady growth rate is interrupted and the economy falls into disequilibrium, cumulative forces tend to perpetuate this divergence thereby leading to either secular deflation or secular inflation.

The Harrod Model is based upon three distinct rates of growth. *Firstly*, there is the *actual growth rate* represented by G , which is determined by the saving ratio and the capital-output ratio. It shows short-run cyclical variations in the rate of growth. *Secondly*, there is the *warranted growth rate* represented by G_w which is the full capacity growth rate of income of an economy. *Lastly*, there is the *natural growth rate* represented by G_n which is regarded as 'the welfare optimum' by Harrod.² It may also be called the potential or the full employment rate of growth.

The Actual Growth Rate. In the Harroddian model the first fundamental equation is:

$$GC = s \quad \dots(1)$$

where G is the rate of growth of output in a given period of time and can be expressed as $\Delta Y/Y$; C is the net addition to capital and is defined as the ratio of investment to the increase in income, i.e., $I/\Delta Y$ and s is the average propensity to save, i.e., S/Y . Substituting these ratios in the above equation we get:

²R.F. Harrod, Second Essay in Dynamic Economics, *Economic Journal*, June 1960.

$$\frac{\Delta Y}{Y} \times \frac{I}{\Delta Y} = \frac{S}{Y} \text{ or } \frac{I}{Y} = \frac{S}{Y} \text{ or } I=S$$

The equation is simply a re-statement of the truism that ex post (actual, realized) savings equal ex post investment.

The above relationship is disclosed by the behaviour of income. Whereas S depends on Y , I depends on the increment in income (ΔY), the latter is nothing but the acceleration principle.

The Warranted Rate of Growth. The warranted rate of growth is, according to Harrod, the rate "at which producers will be content with what they are doing." It is the "entrepreneurial equilibrium; it is the line of advance which, if achieved, will satisfy profit takers that they have done the right thing." Thus this growth rate is primarily related to the behaviour of businessmen. At the warranted rate of growth, demand is high enough for businessmen to sell what they have produced and they will continue to produce at the same percentage rate of growth. Thus, it is the path on which the supply and demand for goods and services will remain in equilibrium, given the propensity to save. The equation for the warranted rate is

$$GwCr=s \quad \dots(2)$$

where Gw is the "warranted rate of growth" or the full capacity rate of growth of income which will fully utilize a growing stock of capital that will satisfy the entrepreneurs with the amount of investment actually made. It is the value of $\Delta Y/Y$. Cr , the 'capital requirements', denotes the amount of capital needed to maintain the warranted rate of growth, i.e., required capital-output ratio.³ It is the value of $I/\Delta Y$, or C is the same as in the first equation, i.e., S/Y .

The equation, therefore, states that if the economy is to advance at the steady rate of Gw that will fully utilize its capacity, income must grow at the rate of s/Cr per year, i.e., $Gw=s/Cr$

If income grows at the warranted rate, the capital stock of the economy will be fully utilised and entrepreneurs will be willing to continue to invest the amount of saving generated at full potential income. Gw is therefore a self-sustaining rate of growth and if the economy continues to grow at this rate it will follow the equilibrium path.

Genesis of Long-run Disequilibria. Full full employment growth, the actual growth rate of G must equal Gw , the warranted rate of growth.

³ Cr is defined by Harrod as "the value of capital required to produce a unit increase in output." *Towards a Dynamic Economics*, p. 81

that would give steady advance to the economy and C (the actual capital goods) must equal C_r (the required capital goods for steady growth).

If G and G_w are not equal, the economy will be in disequilibrium. For instance, if G exceeds G_w , then C will be less than C_r . When $G > G_w$, shortages result. "There will be insufficient goods in the pipeline and/or insufficient equipment." Such a situation leads to *secular inflation* because actual income grows at a faster rate than that allowed by the growth in the productive capacity of the economy. It will further lead to a deficiency of capital goods, the actual amount of capital goods being less than the required capital goods ($C < C_r$). Under the circumstances, desired (ex-ante) investment would be greater than saving and aggregate production would fall short of aggregate demand. There would thus be chronic inflation.⁴ This is illustrated in Fig. 25.1 (A) where the growth rates of income are taken on the vertical axis and time on the horizontal axis. Starting from the initial full employment level of income Y_0 , the actual growth rate G follows the warranted growth path

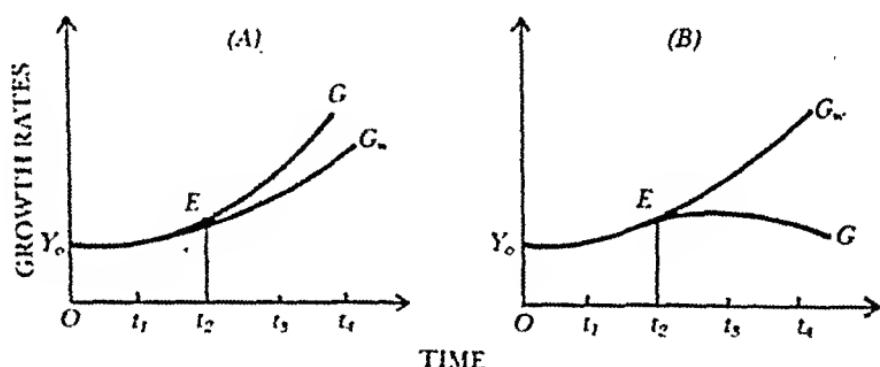


FIG. 25.1

G_w upto point E through period t_2 . But from t_2 onwards, G deviates from G_w and is higher than the latter. In subsequent periods, the deviation between the two becomes larger and larger.

If, on the other hand, G is less than G_w , then C is greater than C_r . Such a situation leads to *secular depression* because actual income grows more slowly than what is required by the productive capacity of the economy leading to an excess of capital goods ($C > C_r$). This means that desired investment is less than saving and that the aggregate demand falls short of aggregate supply. The result is fall in output, employment and income. There would thus be chronic depression.⁵

⁴Domar also considers this possibility, when I grows at a faster rate than σa .
⁵In Domar's model this situation appears when I grows at a rate less than σa .

This is illustrated in Fig. 25.1 (B) when from period t_2 onwards G falls below G_w and the two continue to deviate further away.

Harrod states that once G departs from G_w , it will depart further and further away from equilibrium. He writes: "Around that line of advance which if adhered to would alone give satisfaction, centrifugal forces are at work, causing the system to depart further and further from the required line of advance."⁶ Thus the equilibrium between G and G_w is a *knife-edge equilibrium*. For once it is disturbed, it is not self-correcting. It follows that one of the major tasks of public policy is to bring G and G_w together in order to maintain long-run stability. For this purpose, Harrod introduces his third concept of the natural rate of growth.

The Natural Rate of Growth. It "is the rate of advance which the increase of population and technological improvements allow." The natural rate of growth depends on the macro variables like population, technology, natural resources and capital equipment. In other words, it is the rate of increase in output at full employment as determined by a growing population and the rate of technological progress. The equation for the natural rate of growth is

$$G_n = Cr = or \# s$$

Here G_n is the natural or full employment rate of growth.

Divergence of G , G_w and G_n . Now for full employment equilibrium growth $G_n = G_w = G$. But this is a *knife-edge balance*. For once there is any divergence between natural, warranted and actual rates of growth conditions of secular stagnation or inflation would be generated in the economy. If $G > G_w$, investment increases faster than saving⁷ and income rises faster than G_w . If $G < G_w$, saving increases faster than investment and rise of income is less than G_w . Thus Harrod points out that if $G_w > G_n$ secular stagnation will develop. In such a situation G_w is also greater than G because the upper limit to the actual rate is set by the natural rate as shown in Fig. 25.2(A). When G_w exceeds G_n , $C > Cr$ and there is an excess of capital goods due to a shortage of labour. The shortage of labour keeps the rate of increase in output to a level less than G_w . Machines become idle and there is excess capacity. This further dampens investment, output, employment and income. Thus the economy will be in the grip of chronic depression. Under such conditions saving is a vice.

If $G_w < G_n$, G_w is also less than G as shown in Fig. 25.2(B). The tendency is for secular inflation to develop in the economy. When G_w is less than G_n , $C < Cr$. There is a shortage of capital goods and labour is

⁶Ibid., p. 86.

⁷In the Harroddian sense, ex post investment (C) is identical with saving.⁸ If the difference between C and Cr is a difference between saving and investment,

Harrod does not make such assumptions. In Harrod's equilibrium equation G_w , there is neither any explicit or implicit reference to ΔI or I . It is, however; in his basic equation $G=s/C$ that there is an implicit reference to I , since C is defined as $I/\Delta Y$. But there is no explicit or implicit reference to ΔI .

(6) For Harrod the business cycle is an integral part of the path of growth and for Domar it is not so, but is accommodated in his model by allowing σ (average productivity of investment) to fluctuate.

(7) While Domar demonstrates the technological relationship between capital accumulation and subsequent full capacity growth in output, Harrod shows in addition a behavioural relationship between rise in demand and hence in current output on the one hand, and capital accumulation on the other. In other words, the former does not suggest any behaviour pattern for entrepreneurs and the proper change in investment comes exogenously, whereas the latter assumes a behaviour pattern for entrepreneurs that induces the proper change in investment.

Limitations of these Models

Some of the conclusions depend on the crucial assumptions made by Harrod and Domar which make these models unrealistic:

(1) The propensity to save (α or s) and the capital-output ratio (σ) are assumed to be constant. In actuality, they are likely to change in the long run and thus modify the requirements for steady growth. A steady rate of growth can, however, be maintained without this assumption. As Domar himself writes, "This assumption is not necessary for the argument and that the whole problem can be easily reworked with variable α and σ ."

(2) The assumption that labour and capital are used in fixed proportions is untenable. Generally, labour can be substituted for capital and the economy can move more smoothly towards a path of steady growth. In fact, unlike Harrod's model, this path is not so unstable that the economy should experience chronic inflation or unemployment if G does not coincide with G_w .

(3) The two models also fail to consider changes in the general price level. Price changes always occur over time and may stabilize otherwise unstable situations. According to Meier and Baldwin, "If allowance is made for price changes and variable proportions in production, then the system may have much stronger stability than the Harrod model suggests."

(4) The assumption that there are no changes in interest rates is irrelevant to the analysis. Interest rates change and affect investment. A reduction in interest rates during periods of overproduction can make

capital-intensive processes more profitable by increasing the demand for capital and thereby reduce excess supplies of goods.

(5) The Harrod-Domar models ignore the effect of government programmes on economic growth. If, for instance, the government undertakes a programme of development, the Harrod-Domar analysis does not provide us with causal (functional) relationship.

(6) It also neglects the entrepreneurial behaviour which actually determines the warranted growth rate in the economy. This makes the concept of the warranted growth rate unrealistic.

(7) The Harrod-Domar models have been criticised for their failure to draw a distinction between capital goods and consumer goods.

(8) According to Professor Rose, the primary source of instability in Harrod's system lies in the effect of excess demand or supply on production decisions and not in the effect of growing capital shortage or redundancy on investment decisions.

Despite these limitations, "Harrod-Domar growth models are purely laissez-faire ones based on the assumption of fiscal neutrality and designed to indicate conditions of progressive equilibrium for an advanced economy." They are important "because they represent a stimulating attempt to dynamise and secularise Keynes' static short-run saving and investment theory."⁸

Application of Harrod-Domar Models to Underdeveloped Countries

Growth theory in advanced economies has been associated with three principal concepts: the saving function, autonomous vs. induced investment, and the productivity of capital. The Harrod-Domar models are based on these concepts and were primarily developed in order to illuminate secular stagnation that was threatening the advanced economies in the post-war period. The application of these models has now been extended to the development problems of underdeveloped economies. As Hirschman writes: "The Domar model, in particular, has proved to be remarkably versatile, it permits us to show not only the rate at which the economy must grow if it is to make full use of the capacity created by new investment but inversely, the required savings and the capital-output ratios if income is to attain a certain target growth rate. In such exercises, the capital-output ratio is usually assumed at some value between 2.5 and 5; sometimes several alternative projections are undertaken; with given growth rates, overall or per capita, and with given population projections, in the latter case, total capital requirements for five- or ten-year plans are then easily derived."⁹ Let us

⁸Kurihara, op. cit., p. 153.

⁹A. O. Hirschman, op. cit., pp. 31-32.

see how these models can be used for planning in underdeveloped countries.

Suppose the capital-output ratio is assumed to be 4:1 and the full capacity growth rate or the warranted growth rate is estimated at 3 per cent per annum for the economy. By applying either the Harrod or the Domar formula, the planners can find out the saving-income ratio required to sustain the growth rate of 3 per cent per annum.

In Harrod's model:

$Gw \cdot Cr = s$ and by applying the assumed rates we get,

$3/100 \times 4/1 = 12/100$ or 12 per cent which is the saving-income ratio.

Similarly, in Domar's model:

$$\Delta Y/Y = \alpha\sigma^*$$

$= 3/100 \times 4/1 = 12/100$ or 12 per cent (σ being the reciprocal of Harrod's Cr).

Thus, if the capital-output ratio is assumed as 4:1 in an economy, the community will have to save 12 per cent of its annual income, if its annual growth rate of output is to be 3 per cent. Let us work it out in practice. Given the saving ratio and the capital-output ratio, the Harrod formula for calculating the growth rate is

$Gw = s/Cr$, If s is 12 per cent and the value of Cr 4, then

$Gw = 12/4 = 3$ per cent.

Sir Roy Harrod in the *Second Essay on Dynamic Theory* has tried to make his model more applicable to underdeveloped countries. He has elaborated the supply side of his fundamental equation by introducing the role of interest rate in determining the supply of savings and the demand for savings. The natural rate of interest m is defined as the ratio of the natural growth rate of per capita output Pc and the natural growth rate of income Gn to the elasticity of diminishing utility of income e . Thus

$$m = \frac{Pc \cdot Gn}{e}$$

Taking the values of Pc and Gn as given, the natural rate of interest depends on the value of e which is assumed to be less than unity, m and e are inversely related to each other. When e is small, m is high and vice versa.

The capital requirements, Cr , depend on the rate of interest, $Cr = f(m)$. Rather, Cr is a decreasing function of m . The higher the rate of interest, the lower the capital requirements, and vice versa.

The savings requirements Sr , like Cr , are also of much importance in underdeveloped countries. But the average propensity to save s is not

*As per equation (3) page 234 above

necessarily equal to social requirements of savings, S_r . The actual savings S may be greater or less than S_r , i.e., $S \neq S_r$. If $S < S_r$ then $G_w > G_n$ which means that actual savings being larger in the community, entrepreneurs would desire to invest more! In the long run however G_w cannot continue to be greater than G_n which is the highest growth rate that can be attained. In such a situation, the actual growth rate would attain full employment and will be less than G_w , i.e., $G < G_w$. This will lead to depression in the economy. On the contrary, if $S > S_r$, then $G_w < G_n$. It implies that actual savings being less than the required savings in the community, there would be fall in investment. In the long run, it would lead to a fall in the warranted growth rate below the actual growth rate, i.e., $G_w < G$ and the level of investment would increase. Ultimately there will be chronic inflation.

Since low savings, high level of investment and chronic inflation are some of the features of underdeveloped countries, Harrod suggests the financing of large investments through the expansion of bank credit and automatic investment of inflationary profits in the capital markets. But there are no organised capital markets in such economies, therefore, expansion of bank credit is the only way to finance investments and generate economic growth. Low savings in an underdeveloped country are responsible for its low rate of growth and the existence of mass unemployment and underemployment. Thus the actual level of saving should be raised to the level of required rate of savings by a compulsory levy or a surplus budget so that $S = S_r$. Besides, Harrod also emphasizes the need for changes in social and institutional factors in such economies. For social and institutional obstacles may be the cause of a low growth rate rather than the lack of savings in underdeveloped countries. Under the circumstances, S_r will also be low and S may approximate to it.

Limitations of these Models from the Standpoint of Underdeveloped Countries

The Harrod-Domar models are not applicable to underdeveloped countries for the following reasons:

1. **Different Conditions.** The Harrod-Domar analysis was evolved under different set of conditions. It was meant to prevent an advanced economy from the possible effects of secular stagnation. It was never intended to guide industrialization programmes in underdeveloped economies. The limitations of these growth models, as applied to such economies, therefore, stem from this fact.

2. **Saving Ratio.** These growth models are characterized by a high saving ratio and a high capital-output ratio. In an underdeveloped economy, however, decisions to save and invest are generally under-

7. Foreign Trade and Aid. The Harrod-Domar models are based on the assumption of a closed economy. But underdeveloped countries are open rather than closed economies where foreign trade⁷ and aid play very crucial roles in their economic development. Both these factors are the bases of their economic progress.

8. Price Changes. These models are based on the unrealistic assumption of a constant price level. But in underdeveloped countries price changes are inevitable with development.

⁷K. Kurihara, *op. cit.*, pp. 71-72.

9. Institutional Changes. Institutional factors have been assumed to be given in these models. But the reality is that economic development is not possible without institutional changes in such countries. Therefore, these models fail to apply in underdeveloped countries.

Conclusion. Thus it appears from the above discussion that the Harrod-Domar models, based as they are on unrealistic assumptions, have little practical application in underdeveloped countries. Hirschman, therefore, suggests that "economics of development, like the underdeveloped countries themselves, must learn to walk on its own feet, that is, it must work out its own abstractions."¹¹

But Professor Kurihara is of the view that though "their policy implications are very opposite of what one might expect of an underdeveloped economy," yet "the growth models have this positive lesson for underdeveloped economies, that the state should be allowed to play not only a stabilizing role but also a development role, if these economies are to industrialize more effectively and rapidly than the now industrialized economies did in conditions of laissez-faire." He further opines that because of the universal character of saving-income ratio and capital-output ratio (or its reciprocal) as measurable strategic variables, the growth mechanism discussed by Harrod and Domar is applicable to all economic systems, albeit with due modification. That is why, these growth models are applicable to those underdeveloped countries in which the technique of planning with 'balanced growth' is adopted because under this technique, saving-income ratio and capital-output ratio remain constant during the plan period.¹²

¹¹Hirschman, *op. cit.*, p. 33. Professor S Chakravarty in his book, *The Logic of Investment Planning*, (p. 43), regards these models as 'a very rough tool in itself and not too much should be expected from it.' The great service that these models perform is to indicate very roughly the dimensions of the problem involved in raising the per capita income level in an underdeveloped country. Their highly aggregative nature, however, prevents them from being used as a tool in detailed quantitative policy making and conceals many structural aspects of the problem of a steady rate of growth.

¹²Kurihara, *op. cit.*, Chapters 9 and 11.

taken by the same group of persons. The vast majority of the people live on the margin of subsistence and thus very few are in a position to save.

3. Capital-Output Ratio. Similarly, it is difficult to have a correct estimate of the capital-output ratio where normal productivity is often inhibited by shortages and bottlenecks. When they are removed, there is considerable increase in the productivity of already invested capital. Such an economy, therefore, would have either to increase its saving ratio or capital-output ratio by improving methods of production and removing the various obstacles to investment. Prof. Hirschman is of the view that the 'predictive and operational value' of a model based on the propensity to save and on the capital-output ratio is low and is bound to be far less useful in underdeveloped than in advanced economies.

4. Structural Unemployment. According to Professor Kurihara, the Harrod-Domar growth rate of investment fails to solve the problem of structural unemployment to be found in underdeveloped countries. It can tackle the problem of 'Keynesian unemployment' arising out of deficiency of effective demand or due to under-utilization of capital. But when population grows faster than accumulation of capital in an underdeveloped country, structural unemployment will arise due to lack of capital equipment.¹⁰

5. Disguised Unemployment. These models start with the full employment level of income but such a level is not found in underdeveloped countries. There exists disguised unemployment in such countries which cannot be removed by the methods suggested by Harrod-Domar. Thus the main assumption of the Harrod-Domar models being absent in underdeveloped countries, these models are not applicable to them.

6. Government Intervention. The Harrod-Domar models are based on the assumption that there is no government intervention in economic activities. This assumption is not applicable to underdeveloped countries because they cannot develop without government help. In such countries the role of the state as a 'pioneer entrepreneur' in starting large industries and in regulating and directing private enterprise has been increasingly recognised.

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Chapter 26

THE KALDOR MODEL OF DISTRIBUTION

The Harrod-Domar models are based on the restrictive assumption of a constant saving-income ratio. The Kaldor model¹ is an attempt to make the saving-income ratio a variable in the growth process. It is based on the 'classical saving function' which implies that saving equals the ratio of profits to national income, i.e., $S=P/Y$.

Assumptions. Kaldor builds his model on the following assumptions:

(1) There is "a state of full employment so that total output or income (Y) is given."

(2) National income or output consists of wages (W) and profits (P) only. W comprises both manual labour and salaries, while P includes the income of property owners and of entrepreneurs.

(3) The marginal propensity to consume of workers is greater than that of the capitalists whereby the marginal propensity to save of the workers sw is small in relation to those of capitalists sp . i.e., $sp < sw$.

(4) The investment-output ratio (I/Y) is an independent variable.

(5) Elements of imperfect competition or monopoly power exist.

Given these assumptions, and taking Sw as aggregate savings out of wages and Sp as aggregate savings out of profits, we have

$$Y = W + P$$

$$W = Y - P$$

$$I = S$$

$$S = Sw + Sp$$

But
and

Investment being given and assuming simple proportional savings functions, $Sw = swW$ and $Sp = spP$, we obtain the equation

$$I = spP + swW$$

$$= spP + sw(Y - P) \quad (\because W \text{ is equal to } Y - P)$$

$$= spP + swY - swP$$

$$= (sp - sw)P + swY$$

whence the ratio of investment to national income

$$\frac{I}{Y} = \frac{(sp - sw)P + swY}{Y}, \text{ or } \frac{I}{Y} = (sp - sw) \frac{P}{Y} + sw \dots (1)$$

¹N. Kaldor, Essays on Value and Distribution, 1960, pp. 227-36.

and from (1) the ratio of profit to national income, $\frac{P}{Y}$, can be derived as under

$$(sp - sw) \frac{P}{Y} = \frac{I}{Y} - sw$$

or
$$\frac{P}{Y} = \frac{1}{sp - sw} \times \frac{I}{Y} - \frac{sw}{sp - sw} \quad \dots (2)$$

Thus, given the marginal propensities to save of the wage-earners and the capitalists, the share of profits in national income depends on the ratio of investment to the total output. If there is an increase in investment-income ratio I/Y , it will result in an increase in the share of profits to national income P/Y , so long as $sp > sw$. This is illustrated in Fig. 26.1.

Given the full employment level of income Y_0 , the saving-income ratio and the investment-income ratio are S/Y_0 and I/Y_0 respectively. The economy is in equilibrium with a fixed profit-income ratio given by the vertical line PP . If there is an increase in income, the S/Y and I/Y functions shift upward to S/Y_1 and I/Y_1 . But the share of profits in national income remains constant as given by the line PP . In case I/Y alone shifts up, the saving-income function remaining at S/Y_0 level, there would be

inflationary rise of prices. This would raise the profit-income ratio and thus push up the saving-income function to S/Y_1 . If such a relation continues between the I/Y and S/Y functions, the economy will maintain itself at the full employment level and P/Y will remain constant.

The interpretative value of this model, according to Kaldor, depends on treating investment, or rather the ratio of investment to output I/Y as an independent variable, invariant with respect to changes in sp and sw . This, along with the assumption of full employment, shows that the level of prices in relation of the level of money wages is determined by demand. An increase in the level of investment would raise the level of demand and prices. Consequently, the share of profits in national income would rise, but reduce real consumption. Contrariwise, a fall in

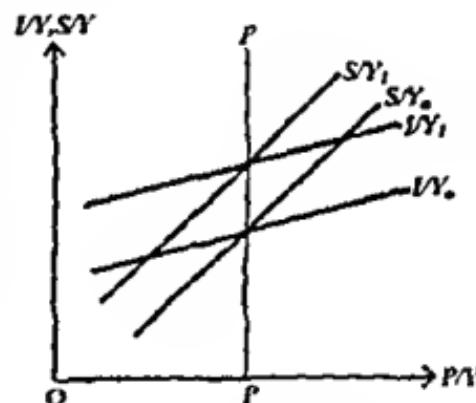


FIG. 26.1

investment will reduce total demand, bring a fall in prices and profit margins, but increase real consumption. "Assuming flexible prices (or rather flexible profit margins) the system is thus stable at full employment."

As already pointed out, this model operates when the two savings propensities differ, $sp \neq sw$. $sp > sw$ is the stability condition. If sp is less than sw , a fall in prices would cause a fall in demand and to a cumulative fall in prices. Similarly, a rise in prices would be cumulative.

Further, "the degree of stability" of the system is dependent upon the difference between the marginal propensities to save, on $1/(sp - sw)$ which Kaldor defines as the 'coefficient of sensitivity of income distribution.' If there is a small difference between the two marginal propensities (sp and sw), the coefficient $(1/(sp - sw))$ will be large and small changes in the investment-output ratio (I/Y) will lead to relatively large changes in income distribution (P/Y) and vice versa. In case the marginal propensity to save from wages is zero ($sp=0$), the amount of profits is equal to the sum of investment and capitalist consumption,² i.e.,

$$P = \frac{1}{sp} I \quad \text{This is "Fisher's rule" where a rise in the consumption of entrepreneurs raises their total profit by an exactly equal amount.}^3$$

If however I/Y and sp are assumed to be constant over time, the share of wages will also be constant. In other words, as output per man increases, real wages will rise automatically. In case the propensity to save out of wages, sw is positive ($sw > 0$), total profits will fall by sw (the amount of workers' savings). When the workers' savings are reduced, total profits rise by a greater amount than the change in investment, and vice versa.

Assuming the investment-output ratio (I/Y) to be an independent variable, its determinants can be described in the Harroddian terminology in terms of the 'rate of growth of output capacity' (G) and the capital-output ratio (v):

$$\frac{I}{Y} = Gv \quad \dots (3)$$

In a state of "continuous full employment" G must equal Harrod's natural rate of growth G_n . For Harrod's equation of warranted rate of growth $I/Y = v$ we can substitute equation (2) above:

²Capital's propensity to consume is sp , just as in the Keynesian analysis marginal propensity to consume is $1/(sp + v)$.

³Cf. J. M. Keynes, *Treatise on Money*, Vol. I, p. 139.

⁴Kaldor's Gv is Harrod's G_n . Cf.

or

$$\frac{P}{Y} = \frac{1}{sp - sw} \times \frac{I}{Y} - \frac{sw}{sp - sw}$$

or

$$\frac{P}{Y} = \frac{1}{sp} \cdot \frac{I}{Y}$$

[∴ $sw=0$]

and

$$\frac{I}{Y} = Gv = Gw \cdot Cr$$

[From (3)]

$$\therefore \frac{P}{Y} = \frac{1}{sp} \cdot Gw \cdot Cr$$

Kaldor concludes "Hence the 'warranted' and the 'natural' rates of growth are not independent of one another, if profit margins are flexible, the former will adjust itself to the latter through a consequential change in P/Y ".

However Kaldor points out that there will not be an inherent tendency to a smooth rate of growth in a capitalist economy. In fact, the causes of cyclical movements are found in disharmony between the warranted and the natural growth rates.

To Kaldor's basic equation (2) may be added two restrictions, i.e., $sw < I/Y$, and $sp > I/Y$. Restriction $sw < I/Y$ excludes the case of a dynamic equilibrium with a negative share of profits, and $sp > I/Y$ excludes the case of a dynamic equilibrium with a negative share of wages. If the former restrictions were not satisfied, the system would enter into a state of chronic underdevelopment. Similarly if the latter were not satisfied, the system would enter into a state of chronic inflation. The Kaldor model is meant to operate within these limits and shows how a distribution of income and a rate of profit through time will help the system in equilibrium.

A Critical Appraisal

The model shows that the share of profits to income P/Y , the rate of profit on investment, and the real wage rate are functions of I/Y which, in turn, is determined independently of P/Y or the real wage rate. But this is true only under certain conditions. First, the real wage rate cannot be below a certain minimum subsistence rate. Second, the share of profits cannot fall below the "risk premium rate," which is the minimum profit rate necessary for inducing capitalists to invest. Third, the share of profits cannot be below the "degree of monopoly rate," i.e., a minimum rate of profit on turnover due to imperfect competition, collusive agreements, etc. The second and third being alternative limitations, the higher of the two will apply. Lastly, the capital-output ratio should be independent of the rate of profit. Otherwise I/Y will

investment will reduce total demand, bring a fall in prices and profit margins, but increase real consumption. "Assuming flexible prices (or rather flexible profit margins) the system is thus stable at full employment."

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$$P = \frac{1}{sp} I \quad \text{This is "widow's curse" where a rise in the consumption of entrepreneurs raises their total profit by an exactly equal amount.}^3$$

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$$\frac{P}{Y} = \frac{1}{sp - sw} \times \frac{I}{Y} - \frac{sw}{sp - sw}$$

or
$$\frac{P}{Y} = \frac{1}{sp} \cdot \frac{I}{Y} \quad [\because sw=0]$$

and
$$\frac{I}{Y} = Gv = Gw \cdot Cr \quad [\text{From (3)}]$$

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$$\frac{P}{Y} = \frac{1}{sp - sw} \times \frac{I}{Y} - \frac{sw}{sp - sw}$$

$$\frac{P}{Y} = \frac{1}{sp} \cdot \frac{I}{Y} \quad [\because sw=0]$$

$$\frac{I}{Y} = Gv = Gw \cdot Cr \quad [\text{From (3)}]$$

$$\therefore \frac{P}{Y} = \frac{1}{sp} \cdot Gw \cdot Cr$$

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Chapter 27

THE PASINETTI MODEL OF PROFIT AND GROWTH

The Pasinetti model¹ is an extension of the Kaldor model of distribution by incorporating workers' profits as returns on their savings. It shows that there exists a distribution of income between profits and wages which keeps the system in a long-run equilibrium.

Assumptions. The Pasinetti model is based on the following assumptions:

1. There is full employment.
2. National income (Y) consists of wages (W) and profits (P).
3. Wages are distributed to workers in proportion to the amount of labour they contribute and profits are distributed to capitalists in proportion to the amount of capital they own.
4. Each class saves a fixed proportion of its income and the capitalists' propensity to save (sc) is greater than that of workers (sw).

Given these assumptions, the national income identity is

$$Y = W + P$$

and

$$P = P_c + P_w$$

$$Y = W + P_w + P_c$$

Where P_c and P_w relate to profits accruing to the capitalists and the workers respectively.

The savings functions of the workers and the capitalists are defined as $S_w = sw(W + P_w)$ and $S_c = scP_c$, so that $S = sw(W + P_w) + scP_c$

We know that

or
But
or
And

$$I = S$$

$$I = sw(W + P_w) + scP_c$$

$$Y = W + P_w + P_c$$

$$W + P_w = Y - P_c$$

$$I = sw(Y - P_c) + scP_c$$

$$(\because W + P_w = Y - P_c)$$

$$= swY - swP_c + scP_c$$

$$= swY + (sc - sw)P_c$$

... (1)

Whence the ratio of investment to national income

¹L.L. Pasinetti, "Rate of Profit and Income Distribution in Relation to the Rate of Economic Growth," *Review of Economic Studies*, Vol. 29 (4), 1962, pp. 267-79.

$$\frac{I}{Y} = \frac{swY + (sc - sw)P_c}{Y}$$

or $\frac{I}{Y} = sw + \frac{P_c}{Y}(sc - sw)$

or $\frac{P_c}{Y}(sc - sw) = \frac{I}{Y} - sw$

or $\frac{P_c}{Y} = \frac{1}{sc - sw} \times \frac{I}{Y} - \frac{sw}{sc - sw} \dots (2)$

This expression explains the distribution of income between capitalists and workers

Similarly the ratio of investment to total capital can be derived from (1).

$$\frac{I}{K} = \frac{swY + (sc - sw)P_c}{K}$$

or $\frac{I}{K} = sw \frac{Y}{K} + \frac{P_c}{K}(sc - sw)$

or $\frac{P_c}{K}(sc - sw) = \frac{I}{K} - sw \frac{Y}{K}$

or $\frac{P_c}{K} = \frac{1}{sc - sw} \times \frac{I}{K} - \frac{sw}{sc - sw} \times \frac{Y}{K} \dots (3)$

The expressions (2) and (3) refer to that part of profits which accrue to the capitalists alone.

To show the distribution of income between profits and wages, we must add the share of workers' profits into income P_w/Y to both sides of equation (2) as this equation simply represents the share of capitalists' profits in national income. Thus the distribution of income between profits and wages can be expressed as

$$\frac{P}{Y} = \frac{P_c}{Y} + \frac{P_w}{Y} \dots (4)$$

Similarly, equation (3) simply represents the ratio of capitalists' profits to total capital and not the ratio of total profits to total capital (rate of profit). So to find out the rate of profit, we must add the share of workers' profit into capital P_w/K to both sides of equation (3), so that

$$\frac{P}{Y} = \frac{P_c}{Y} + \frac{P_w}{Y} \dots (5)$$

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$$I = S$$

or

$$I = sw(W + P_w) + scP_c$$

But

$$Y = W + P_w + P_c$$

or

$$W + P_w = Y - P_c$$

And

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$$(\because W + P_w = Y - P_c)$$

$$= swY - swP_c + scP_c$$

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This expression explains the distribution of income between capitalists and workers.

Similarly the ratio of investment to total capital can be derived from (1).

$$\frac{I}{K} = \frac{swY + (sc - sw)P_c}{K}$$

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or $\frac{P_c}{K} = \frac{1}{sc - sw} \times \frac{I}{K} - \frac{sw}{sc - sw} \times \frac{Y}{K} \dots (3)$

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$$\frac{P}{K} = \frac{P_c}{K} + \frac{P_w}{K} \dots (5)$$

zero. Further, he postulates that the saving propensities differ by class rather than by type of income and that the classes are stable. His steady state requires the distribution of ownership of capital between classes to be constant. And the only condition for stability in long-run equilibrium is that $sc > 0$, whereas the stability conditions, $sw < I/Y$ and $sc > I/Y$, of the Kaldor model are short-run conditions. Thus on all counts, the Pasinetti model is superior and more realistic than the Kaldor model.

Chapter 28

JOAN ROBINSON'S MODEL OF CAPITAL ACCUMULATION

THE ROBINSON MODEL

Mrs Joan Robinson in her book "The Accumulation of Capital" builds a simple model of economic growth based on the 'capitalist rules of the game.' But "it is not so much concerned with an automatic convergence to a moving equilibrium in a capitalist economy, as with studying the properties of equilibrium growth."

Assumptions. Mrs Robinson's model is based upon the following assumptions:

- (a) There is a laissez-faire closed economy.
- (b) In such an economy capital and labour are the only productive factors.
- (c) In order to produce a given output, capital and labour are employed in fixed proportions.
- (d) There is neutral technical progress.
- (e) There is no shortage of labour and entrepreneurs can employ as much labour as they wish.
- (f) There are only two classes—the workers and the entrepreneurs—between whom the national income is distributed.
- (g) Workers save nothing and spend their wage income on consumption.
- (h) Entrepreneurs consume nothing but save and invest their entire income (from profits) for capital formation. "If they have no profits, the entrepreneurs cannot accumulate and if they do not accumulate, they have no profits."
- (i) There are no changes in the price level.

Net national income in the Robinson model¹ is the sum of the total wage bill plus total profits which may be shown as

$$Y = wN + pK$$

where Y is the net national income, w the real wage rate, N the number of workers employed, p the profit rate and K the amount of capital.

¹Mrs Joan Robinson builds only a "verbal" model. The credit for constructing a mathematical model goes to Prof. Kenneth Kurihara, *op. cit.*

Here Y is a function of N and K . Since the profit rate is crucial in the theory of capital accumulation, it can be shown as:

$$P = \frac{Y - wN}{K}$$

$$\frac{Y}{N} - w$$

$$P = \frac{\frac{Y}{N} - w}{\frac{K}{N}}$$

Divided by N ,

By putting $Y/N=I$ and $K/N=\theta$ (theta), we have

$$P = \frac{I - w}{\theta}$$

Thus the profit rate is the ratio of labour productivity *minus* the total real wage bill to the amount of capital utilized per unit of labour. In other words, the profit rate (P) depends on income (Y), labour productivity (I), the real wage rate (w) and the capital-labour ratio (θ).

On the expenditure side, net national income (Y) equals consumption expenditure (C) plus investment expenditure (I),

$$Y = C + I.$$

Since Joan Robinson assumes zero saving out of wages but attributes saving to entrepreneurs, profits are meant for investment only, we have

$$S = I$$

This saving-investment relation may be shown as:

$$S = pK$$

and

$$I = \Delta K \quad [\Delta K \text{ is increase in real capital}]$$

$$pK = \Delta K \quad \therefore S = I$$

or

$$p = \frac{\Delta K}{K} = \frac{I - w}{\theta}$$

The growth rate of capital ($\Delta K/K$) being equal to p (the profit rate), it depends on the ratio of the net return on capital relative to the given stock of capital. If income remains constant and the wage rate decreases or income increases and the wage rate remains constant, the profit rate would tend to increase. The profit rate can also increase if the capital-labour ratio falls. In this way the entrepreneurs maximize profits.

The Golden Age. Besides the growth rate of capital ($\Delta K/K$), another factor which determines the growth rate of an economy is the growth

rate of population ($\Delta N/N$). When the growth rate of population equals the growth rate of capital i.e., $\Delta N/N = \Delta K/K$, the economy is in full employment equilibrium. Joan Robinson characterises it as "a golden age" to describe smooth, steady growth with full employment. "When technical progress is neutral and proceeding steadily, without any change in the time pattern of production, the competitive mechanism working freely, population growing at a steady rate and accumulation going on fast enough to supply productive capacity for all available labour, the rate of profit tends to be constant and the level of real wages to rise with output per man. There are then no internal contradictions in the system. Total annual output and the stock of capital then grow together at a constant proportionate rate compounded at the rate of increase of the labour force and the rate of increase of output per man. We may describe the conditions as a golden age."²

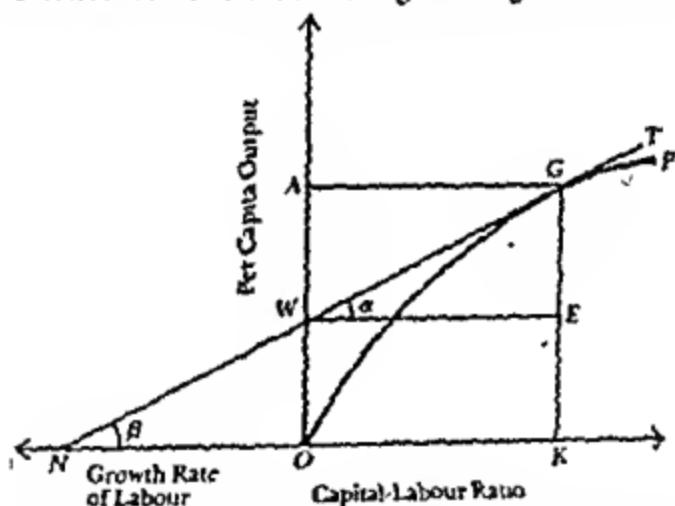


FIG. 28.1

The golden age is explained diagrammatically in Fig. 28.1. Capital-labour ratio K/N or θ is measured along the horizontal axis and per capita output on the vertical axis. The growth rate of labour force is taken to the left of O along the horizontal axis. The curve OP shows the production function. Every point on this curve shows the ratio of capital to labour. In order to find out the capital-labour ratio and the wage-profit relation, we draw a tangent NT which touches the production function OP at point G and cuts the vertical axis at W. Point G shows the capital-labour ratio for the golden age which is measured by OK. Per capita output is OA, out of this OW is paid as wages and WA or EG is the surplus which is the rate of profit on capital.

²J. Robinson, *The Accumulation of Capital*, p. 99

This figure also proves that the growth rate of capital ($\Delta K/K$) equals the growth rate of labour ($\Delta N/N$). EG/EW reflects $\Delta K/K$ and OW/ON reflects $\Delta N/N$. Thus

$$\frac{EG}{EW} = \frac{OW}{ON} \quad [\because \tan \alpha = \tan \beta]$$

In case the economy diverges from the path of "golden age" certain forces may tend to bring back the equilibrium position. Suppose that the rate of population growth is higher than the rate of capital growth, i.e., $\Delta N/N > \Delta K/K$, thereby leading to progressive underemployment. In such a situation surplus of labour will lead to a fall in money wages and if the price level remains constant, to a fall in real wages. As a result, the profit rate would tend to rise and increase the growth rate of capital to the population level. The equilibrating mechanism would not work if real wages fail to fall either due to the rigidity of money wages or because the price level falls in the same proportion as money wages. The golden age equilibrium will not be restored and progressive underemployment will continue. According to Professor Kurihara: "This latter possibility agrees with Harrod's notion of indefinite instability based on the assumption of constancy of technological coefficients and relative factor-price movements."³

In the contrary case of capital growing faster than population growth, i.e., $\Delta K/K > \Delta N/N$, equilibrium to the path of 'golden age' can be brought about by technological changes such as a change in the capital-labour ratio or in labour productivity and by shifting the whole production function upward so that as capital accumulates, the need for labour also increases. Mrs Robinson, however, says that the "mechanism by which the rate of accumulation is adjusted to the rate of increase in the supply of labour is more reliable when what is required is a reduction in the rate of accumulation than when a rise is required; it is only too easy for a surplus of labour to grow, relatively to the stock of capital, while investment fails to increase and the economy sinks into stagnation; whereas entrepreneurs will not accumulate and maintain redundant capital, so that when the rate of capital is too high (relatively to the labour force) one way or another it is certain to be cut down."⁴

According to Mrs Robinson, an economy is in a golden age when the potential growth ratio is being realized. The potential growth ratio "represents the highest rate of capital accumulation that can be permanently maintained at a constant rate of profit. This potential

³K. Kurihara, *op. cit.*, p. 77.

⁴*Op. cit.*, p. 78.

growth ratio is approximately equal to the proportionate rate of labour force plus the proportionate rate of growth of output per head. The conditions of a golden age require the growth ratio to be steady as frequent changes in the growth ratio disturb the tranquillity of a golden age. But this tranquillity may not be possible even when the growth ratio is stable. A rise in the total stock of capital is likely to slacken the urge to accumulate so that a state of stagnation starts and the economy goes off the path of the golden age. The golden age is not an ideal. A new growth ratio makes a new golden age possible. An increase in growth ratio necessitates a rise in the proportion of productive capacity and a fall in consumption. Contrariwise, a fall in the growth ratio leads either to unemployment or to increased consumption. A static state is, however, a special case of a golden age where the growth ratio is zero, the profit rate is also zero and wages absorb the entire net output of industry. Joan Robinson calls this "the state of economic bliss," since consumption is at the maximum level which can be permanently maintained in the given technical conditions.⁵

So far as technical progress is concerned, it is neutral in the sense "that the value of capital in terms of wage units per man employed does not alter appreciably when accumulation is going on at such a pace as to keep the rate of profit constant." But the rate of technical progress depends upon demand and supply of labour. When firms fail to take advantage of the profitable markets expanding around them, they try to adopt labour-saving devices. This is because the rate of technical progress is defined as the rise in output per head, assuming zero growth rate of population. However, technical progress continues even when there is massive unemployment. Joan Robinson points out that the growth of knowledge may lead to 'autonomous innovations,' competition among firms may lead to 'competitive innovations,' and the scarcity of labour may lead to 'induced innovations.' For the purpose of the model, the desired rate of growth may fall short of the possible rate of growth due to competitive and autonomous innovations.

The desired growth rate is the rate of accumulation which makes the firms satisfied with the situation in which they find themselves. The desired growth rate is determined by the rate of profit caused by the rate of accumulation, and the rate of accumulation induced by that rate of profit. J. Robinson uses the following Fig. 28.2 to explain it. The curve A represents the expected rate of profit as a function of the rate of accumulation. The curve I represents the rate of accumulation as a function of the rate of profit. In a situation to the right of the point D,

⁵In the Harroddian terminology, it is a state in which the natural, the actual & warranted rates of growth are all equal.

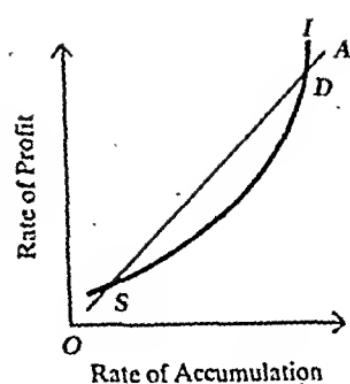


FIG. 28.2

On the other hand, the possible growth rate depends upon the physical conditions resulting from the growth of population and technical knowledge.

When the desired growth rate equals the possible growth rate at near full employment, the economy is in a golden age. The real wage rate is rising with increasing output per head due to technical progress. But the rate of profit on capital remains constant. And techniques of production appropriate to the rate of profit are chosen. This is the golden age which Joan Robinson visualises.

A Critical Appraisal

Mrs Robinson's model is an elaboration of Harrod's growth model. The possible growth rate is Harrod's natural growth rate. In the golden age, the actual (G) and the natural growth (G_n) rates are equal to each other and the warranted growth rate (G_w) confirms to them. Both postulate neutral technical conditions and a constant saving ratio. However, Joan Robinson's theory of capital accumulation depends on the profit-wage relation and on labour productivity. Harrod's theory on the contrary depends on saving-income ratio and on capital productivity. The former stresses the importance of *labour* in capital accumulation while the latter that of *capital*.

Commenting on Mrs Robinson's model, Professor Kurihara opines that "J. Robinson's chief contribution to post-Keynesian growth economics seems to be that she has integrated classical value and distribution theory and modern Keynesian saving-investment theory into one coherent system." But it "is not capable of being modified so as to introduce fiscal-monetary policy parameters—unless labour productivity, the wage rate, the profit rate and the capital-labour ratio could be

the expected rate of profit is less than the rate of accumulation. Any further investment is not likely to be profitable and the rate of accumulation will fall. Between the points S and D , the rate of accumulation is less than the expected rate of profit. Therefore, there will be tendency to increase investments and the rate of accumulation will rise to point D . Thus the point D represents the desired growth rate.

regarded as objects of practical policy—as they might be so regarded in a completely planned economy.¹⁶

Despite these merits, it has the following weaknesses:

"Joan Robinson's discussion of capital growth has the subtle effect of discrediting the whole idea of leaving so important a problem as economic growth to the capitalist rules of the game, for her model of laissez-faire growth demonstrates how precarious and insecure it is to entrust to private profit-makers the paramount task of achieving the stable growth of an economy consistent with the needs of a growing population and the possibility of advancing technology."¹⁷

Joan Robinson's model is based on the assumption of a closed economy. But this is an unrealistic assumption because capitalist countries are open rather than closed economies in which foreign trade plays a crucial role in accelerating the growth rate.

This model assumes institutional factors as given. But the role of institutional factors as one of the determinants of economic growth cannot be neglected in any model. The development of an economy to a considerable extent depends on social, cultural and institutional changes.

This model is based on the unrealistic assumption of constant price level. When an economy moves on the path to progress, investment has to be increased continuously which tends to raise the demand for factors but their supply cannot be increased to match the demand. This leads to rise in prices. Thus price rise is inevitable with growth.

Mrs Robinson assumes that capital and labour are employed in fixed proportions to produce a given output. This is an unrealistic assumption because in a dynamic economy there are no fixed coefficients of production. Rather, substitutability between capital and labour takes place through time, the degree of substitutability being dependent upon the nature of technological changes.

Its Applicability to Underdeveloped Countries

Robinson's model has the following merits for underdeveloped countries.

Joan Robinson, in her theory, studies the problem of population and its effect on the rate of capital accumulation. There is a "golden age" which any country can achieve through planned economic development.

An underdeveloped economy faces the problem of the rate of population growth being faster than that of capital growth, i.e., $\Delta N/N > \Delta K/K$, as posed by Joan Robinson. It reveals the tendency of progressive underemployment in such economies.

¹⁶K. Kunhara, op. cit., p. 80

The "potential growth ratio" is crucial to J. Robinson's theory of economic growth. The golden age depends on the growth ratio. The task of planning becomes easier if the potential growth ratio of an economy is calculated for the planning period on the basis of the growth rate of labour force and of output per head.

In an underdeveloped economy the rate of capital accumulation is always less than its potential growth ratio, that is why it is backward and possesses surplus of labour force. It, therefore, rests with the planning authority to increase the rate of accumulation to the level of the growth ratio for the economy. An underdeveloped country cannot, however, match the two by following the 'capitalist rules of the game.' On the contrary, it devolves on the planning authority to take the initiative in controlling and regulating not only private investment but also public investment in such economies.

Thus it is not possible to use the concept of the 'golden age' in solving the problems of under development, for the unchanging continuity required for the golden age is not present in a developing economy.

Chapter 29

MEADE'S NEO-CLASSICAL MODEL OF ECONOMIC GROWTH

Professor J.E. Meade has constructed a neo-classical model of economic growth which "is designed to show the way in which the simplest form of economic system would behave during a process of equilibrium growth."¹

Assumptions. Meade constructs his model around the following assumptions:

- (i) There is a laissez-faire closed economy where there is perfect competition.
- (ii) There are constant returns to scale.
- (iii) Two commodities—consumption goods and capital goods—are produced in the economy.
- (iv) Machines are the only form of capital in the economy.
- (v) All machines are assumed to be alike.
- (vi) It is assumed that there is a constant money price of consumption goods.
- (vii) There is full use of land and labour.
- (viii) The ratio of labour to machinery can be changed both in the short and the long run. Meade calls this the assumption of perfect malleability of machinery.
- (ix) It is further assumed that there is perfect substitutability in production between capital goods and consumption goods.
- (x) There is the assumption of depreciation by evaporation, that is, each year some percentage of machines wears out which requires replacement.

The Model. In the economy visualised above, the net output produced depends upon four factors:

- (i) the net stock of capital available in the form of machines;
- (ii) the amount of available labour force;
- (iii) the availability of land and natural resources; and
- (iv) the state of technical knowledge which continues to improve through time. This relationship is expressed in the form of the production function as,

¹J. E. Meade, *A Neo-Classical Theory of Economic Growth*, 1961.

$$Y = F(K, L, N, t)$$

where Y is net output or net national income, K the existing stock of capital (machines), L the labour force, N land and natural resources and t is time, signifying technical progress.

Assuming the amount of land or natural resources to be fixed, net output can increase in any one year with the growth in K , L , and t . This relationship is shown as

$$\Delta Y = V\Delta K + W\Delta L + \Delta Y'$$

where Δ in each case represents an increase, V is the marginal product of capital, W the marginal product of labour and Y' is used in place of t . Thus "the increase over the year in the rate of annual net output (ΔY) is equal to the increase in the stock of machinery (ΔK) multiplied by its marginal products (V) plus the increase in the amount of labour (ΔL) multiplied by its marginal product (W) plus the increase in the rate of annual output due simply to technical progress ($\Delta Y'$)."¹ The annual proportionate growth rate of output is

$$\frac{\Delta Y}{Y} = \frac{VK}{Y} \cdot \frac{\Delta K}{K} + \frac{WL}{Y} \cdot \frac{\Delta L}{L} + \frac{\Delta Y'}{Y}$$

where $\Delta Y/Y$ is the proportionate growth rate of output, $\Delta K/K$ the proportionate growth rate of the stock of capital, $\Delta L/L$ the proportionate growth rate of labour force and $\Delta Y'/Y$ the proportionate growth rate of technical progress during a year.

Let these proportionate growth rates be expressed as y , k , l and r respectively, the proportionate marginal product of capital VK/Y as U and the proportional marginal product of labour WL/Y as Q . * Now the basic relationship is

$$y = Uk + Ql + r$$

This shows that the growth rate of output (y) is the weighted sum of three other growth rates, first the sum of the growth rate in the stock of capital (k) weighted by the proportional marginal product of capital (U) plus the growth rate of population (l) weighted by the marginal product of labour (Q) plus the growth rate of technology (r).

But the real index of the growth of the economy is the growth rate of real income *per head* rather than the growth rate of income (y). If, for example, total income (y) rises by 10 per cent per annum and population (l) by 8 per cent, income per head ($y-l$) will rise by about 2 per cent per

* VK/Y represents the proportion of the net national income being paid as profits to the owners of machines, while WL/Y is the proportion of income going to the labour force as wages.

annum. The growth rate of real income per head is

$$\begin{aligned}y - l &= UK + Ql + r - l \\&= UK - l + Ql + r \\&= UK - (1-Q)l + r\end{aligned}$$

The equation reveals that the growth rate of real income per head is raised in two ways: first, by an increase in the rate of real capital (k) weighted by its proportional marginal product (U); and second, by an increase in the rate of technical progress (r). On the other hand, it is depressed by the growth rate of population (l) weighted by one minus the proportional marginal product of labour ($1-Q$). This part of the equation, i.e., $[-((1-Q))l]$ shows the tendency for diminishing returns as the quantity of labour is increased on a given amount of land and capital.

One of the important factors contributing to the growth rate of output is the annual rate of capital accumulation in the economy. This fact is implied in the element Uk . $U = VK/Y$, and $k = \Delta K/K$, but ΔK , the addition to the stock of capital is equal to the savings out of the net national income. Therefore $\Delta K = SY$, and $k = \Delta K/K = SY/K$ where SY represents the amount annually added to the stock of capital through savings.*

Hence $Uk = VK/Y \times SY/K = VS$, ** and the basic growth relationship can be expressed as

$$y - l = VS - (1-Q)l + r$$

Having examined the main factors determining the growth rate of real income per head, Professor Meade discusses the conditions which may lead to changes in the rate of economic growth over time. Assuming l and r to be given and constant, changes in growth rate would be determined by the behaviour of V , S , and Q over time. If there is no change in population (l) and technical progress (r), an increase in the rate of savings (S) would raise capital per head and bring a decline in the marginal product of capital (V). This decline in V will, however, be less if it is possible to substitute capital for land and labour. And if technical progress takes place, V will tend to rise instead of declining. But the amount of land and labour being fixed in the economy, more capital per head will be used and at the same time technical progress will tend to

* S is the propensity to save and not absolute savings

** Professor Meade explains this point with certain numerical examples. If V , the marginal product of capital (rate of profit) is 5 per cent per annum and S , savings are 1/10 of the national income, then the contribution of capital accumulation to the growth rate of output would be $5 \times 1/10 = 1/2$ per cent per annum. See, op. cit., pp. 16-17 for other solutions.

raise V . Under these conditions, the rate of growth of income per head over time would rise which in turn would tend to raise S . There will be a tendency for S to rise still further due to a change in income distribution towards larger profits caused by the above-mentioned factors. We may conclude that with a constant population ($I=O$), real income per head depends upon the rate of capital accumulation (VS) and technical progress (r). The equation is

$$y-I = VS - (1-Q) I + r$$

$$I=O \quad Y=VS+r$$

Since

If the rate of technical progress along with population growth is assumed to be constant, the growth rate in income per head will vary directly with

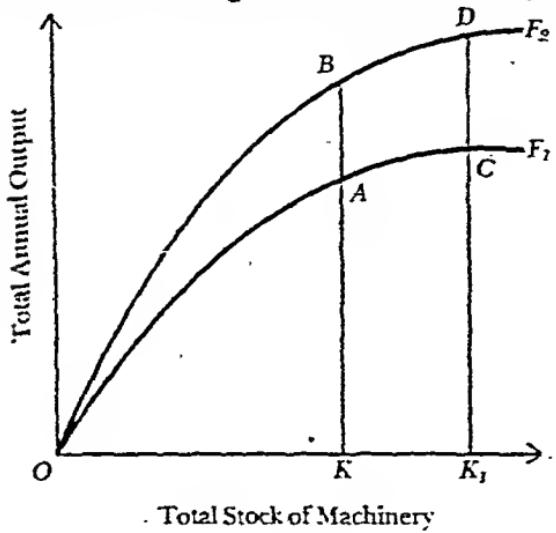


FIG. 29.1

technical knowledge is given. If in year 1 the quantity of machinery is OK_1 , the production in that year will be KA . The slope of the curve at point A shows the marginal productivity of machinery which declines as we move towards the right along the curve. This is because like other factors the law of diminishing returns applies on machinery. Thus the marginal product of machinery at point C will be less than at point A . In year 2, the new production function becomes OF_2 due to technical progress. As a result, production increases from KA to KB by using the same machinery OK_1 . Similarly, by the use of OK_2 machinery the production increases from K_1C in year 1 to K_2D in year 2. Thus technical progress leads to the increase of total annual output.

The State of Steady Growth. Further Professor Meade examines the conditions of the state of steady economic growth. It is a state in which the growth rate in total output (income) is constant and so is the growth rate in income per head. It is assumed that population is growing at a

VS.

The effect of technical progress on total national output (income) is shown in Fig. 29.1. The total stock of machinery (capital) is represented on the horizontal axis and the total annual output on the vertical axis. OF_1 is the production function which shows the quantity of output produced in year 1 with the given quantity of

constant proportionate rate (λ) and the rate of technical progress does not change.

The state of steady economic growth requires the existence of the following three conditions to ensure a constant growth rate in total income:

(a) All elasticities of substitution between the various factors are equal to unity.

(b) Technical progress is neutral towards all factors.

(c) The proportions of profits saved, of wages saved, and of rent saved are all constant.

Conditions (a) and (b) mean that the proportions of the national income going to profits (U), wages (Q) and rents (Z) remain constant. So do the proportions of national income saved out of these remunerations of factors remain constant as per condition (c). Let these savings out of profits (U), wages (Q) and rents (Z) be represented by S_U , S_Q and S_Z respectively, so that total savings $S = S_U U + S_Q Q + S_Z Z$. Since all the elements in this equation are constant vide conditions, (a), (b) and (c), it follows that the ratio of total savings to total national income (S) will also be constant.

The growth rate of income is represented by the basic relationship $y = UK + QI + r$ wherein U , Q , I , and r are assumed to be constant. Therefore, for y to be constant (as required by the state of steady economic growth), k should be constant. We know that $k = S/Y$ & but S is constant as seen in the preceding para. So k will be constant if Y/K is constant. Y/K will be constant if the rate of growth of Y and K is the same which implies the equality of y and k itself, i.e., $y = k$. The obvious conclusion follows that the growth rate of income will be constant if the growth rate of capital stock (k) is equal to the growth rate of national income (y).

Critical Growth Rate. The equilibrium position ultimately depends upon the rate of accumulation of the capital stock. According to Meade, there is a critical growth rate of the capital stock which makes the growth rate of income equal to the growth rate of capital stock. A more or less growth rate in the capital stock than this critical growth rate will not bring about the equality of y and k . If we denote the 'critical growth rate' then the basic relationship will be

$$y = Ua + Q \cdot \frac{r}{\lambda} + r$$

$$a = \frac{Q - r}{\lambda - L}$$

or

*This can be proved with a numerical example. Suppose $L=100$, $U=1/4$, $Q=1/3$, $Z=1/6$, $r=1$ per cent, $\lambda=1/2$, then

greater than k , i.e., $BE > CE$. As a consequent, k will start rising till point F on the X -axis is reached which brings about the equality of y and k (the 45° line) at H . This represents the state of steady economic growth where the critical growth rate brings $y=k$.

The "critical growth rate" can also be derived from this diagram.

$$y = Uk + QI + r$$

$$HF = GF \cdot HF + GH \quad [\because QI + r = GH]$$

$$HF - GF \cdot HF = GH$$

$$HF(1 - GF) = GH$$

$$HF = \frac{GH}{(1 - GF)}$$

or

$$OF = \frac{GH}{1 - GF} \quad [\therefore HF = OF]$$

or

$$k = \frac{QI + r}{(1 - U)} .$$

A Critical Appraisal

Professor Meade's neo-classical model has been severely criticised due to its unrealistic assumptions.

This model is steeped in the classical tradition of a perfectly competitive economy where all production units are assumed independent of each other. But these are unrealistic assumptions for neither is there perfect competition nor are the production units independent of each other.

The assumption of the neo-classical theory that there are only constant returns to scale is also defective. The fact is that there are increasing returns to scale rather than constant returns in the growth process.

Mrs Robinson calls Meade's model pseudo-causal because it merely states that monetary policy keeps the prices of consumption goods constant, while money wage rates ensure full employment.

Another serious defect of the neo-classical model stems from the assumptions that all machines are alike and there is perfect malleability of machines. The latter implies that the ratio of labour to machinery can

$$\begin{aligned} y &= UK + QI + r \\ &= (\frac{1}{4} \times 2^2) + (\frac{1}{2} \times 2) + 1 \\ &= 2^2. \end{aligned}$$

This is the value which y and k will have in the state of steady economic growth.

Meade, op. cit., pp. 33-34.

be changed both in the short and long run. But this is unrealistic because the ratio of labour to machinery cannot be changed in the short run. Thus Meade sidetracks the problem of foresight by assuming perfect malleability of machines and depreciation by evaporation. This makes his model impracticable.

According to Prof. Butterick, there is no place for uncertainty in Meade's model. The interrelations of all variables have been regarded as certain. This detracts from the practicability of the model and it simply remains a theoretical analysis.

Like the Harrod-Domar and Joan Robinson models, Meade's model is based on the assumption of a closed laissez-faire economy. But this is an unrealistic assumption which neglects the importance of foreign trade in economic development.

Another serious defect of this model is that it completely neglects the role of institutional factors in the development process. Meade forgets that social, cultural, political and institutional factors play an important part in economic growth. In the absence of these factors his model simply becomes the Robinson Crusoe model.

Despite these defects, the Meade model has the chief merit of demonstrating the influences of population growth, capital accumulation and technical progress on the growth rate of national income and per capita real income over time. Further, the state of steady growth is indeed Mrs Robinson's Golden Age explained in a more realistic manner by studying the behaviour of those variables which she assumes as constants.

Chapter 30

THE SOLOW MODEL OF LONG-RUN GROWTH

Professor R M Solow¹ builds his model of economic growth as an alternative to the Harrod-Domar line of thought without its crucial assumption of fixed proportions in production. Solow postulates a continuous production function linking output to the inputs of capital and labour which are substitutable.

Assumptions. Solow builds his model around the following assumptions:

- (1) One composite commodity is produced
- (2) Output is regarded as *net output* after making allowance for the depreciation of capital.
- (3) There are constant returns to scale. In other words, the production function is homogeneous of the first degree
- (4) The two factors of production—labour and capital—are paid according to their marginal physical productivities
- (5) Prices and wages are flexible.
- (6) There is perpetual full employment of labour
- (7) There is also full employment of the available stock of capital.
- (8) Labour and capital are substitutable for each other
- (9) There is neutral technical progress
- (10) The saving ratio is constant.

Given these assumptions, Solow shows in his model that with variable technical coefficient there would be a tendency for capital-labour ratio to adjust itself through time in the direction of equilibrium ratio. If the initial ratio of capital to labour is more, capital and output would grow more slowly than labour force and vice versa. Solow's analysis is convergent to equilibrium path (steady state) to start with any capital-labour ratio.

Solow takes output as a whole, the only commodity, in the economy. Its annual rate of production is designated as $Y(t)$ which represents the real income of the community, part of it is consumed and the rest is saved and invested. That which is saved is a constant s , and the rate of saving is $s/Y(t)$. $K(t)$ is the stock of capital. Thus net investment is the rate of increase of this stock of capital, i.e., dk/dt or \dot{K} . So the basic

¹"A Contribution to the Theory of Economic Growth." *OQE*, Vol. 70, 1956, pp. 61.

be changed both in the short and long run. But this is unrealistic because the ratio of labour to machinery cannot be changed in the short run. Thus Meade sidetracks the problem of foresight by assuming perfect malleability of machines and depreciation by evaporation. This makes his model impracticable.

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¹"A Contribution to the Theory of Economic Growth," *OJE*, Vol. 70, 1956, pp. 65-94.

identity is

$$\dot{\bar{K}} = s\bar{Y} \quad \dots(1)$$

Since output is produced with capital and labour, technological possibilities are represented by the production function

$$\dot{Y} = F(\bar{K}, \bar{L}) \quad \dots(2)$$

that shows constant returns to scale.

Inserting equation (2) in (1), we have

$$\dot{\bar{K}} = sF(\bar{K}, \bar{L}). \quad \dots(3)$$

In equation (3), \bar{L} represents total employment.

Since population is growing exogenously, the labour force increases at a constant relative rate n . Thus

$$\bar{L}(t) = L_{oe} e^{nt} \quad \dots(4)$$

Solow regards n as Harrod's natural rate of growth in the absence of technological change; and $\bar{L}(t)$ as the available supply of labour at time (t). The right hand side of equation (4) shows the compound rate of the growth of labour force from period 0 to period t . Alternatively equation (4) can be regarded as a supply curve of labour. "It says that the exponentially growing labour force is offered for employment completely inelastically. The labour supply curve is a vertical line, which shifts to the right in time as the labour force grows according to (4). Then the real wage rate adjusts so that all available labour is employed, and the marginal productivity equation determines the wage rate which will actually rule."

By inserting equation (4) in (3), Solow gives basic equation

$$\dot{\bar{K}} = sF(\bar{K}, L_{oe} e^{nt}) \quad \dots(5)$$

He regards this basic equation as determining the time path of capital accumulation, $\dot{\bar{K}}$, that must be followed if all available labour is to be fully employed. It provides the time profile of the community's capital stock which will fully employ the available labour. Once the time paths of capital stock and of the labour force are known, the corresponding time path of real output can be computed from the production function.

Professor Solow sums up the growth process thus: "At any moment of time the available labour supply is given by equation (4) and the available stock of capital is also a datum. Since the real return to factors will adjust to bring about full employment of labour and capital we can use the production function of equation (2) to find the current rate of output. Then the propensity to save tells us how much of net output will be saved and invested. Hence we know the net accumulation of capital

during the current period. Added to the already accumulated stock this gives the capital available for the next period, and the whole process can be repeated.¹

Possible Growth Patterns. In order to find out if there is always a capital accumulation path consistent with any rate of growth of the labour force towards steady state, Professor Solow introduces his fundamental equation²

$$r = sF(r, 1) - nr \quad .(6)$$

In this equation r is the ratio of capital to labour (K/L). n is the relative rate of change of the labour force (\dot{L}/L). The function $sF(r, 1)$ represents output per worker as a function of capital per worker. In other words, it is the total product curve as varying amounts r of capital are employed with one unit of labour. The equation (6) itself states that the rate of change of capital-labour ratio (\dot{r}) is the difference of two terms, one representing the increment of capital [$sF(r, 1)$] and the other increment of labour (nr).

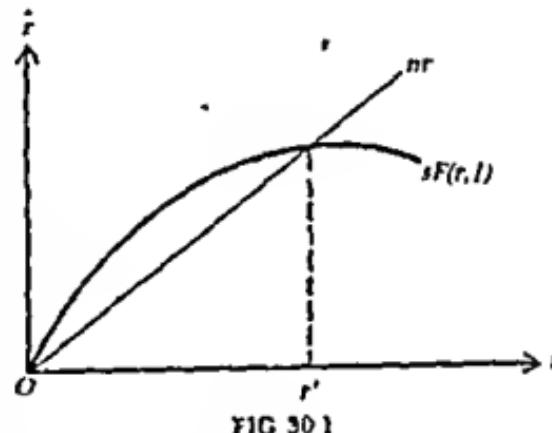


FIG 30.1

Solow illustrates diagrammatically possible growth patterns based on his fundamental equation (6).

In Fig. 30.1, the ray through the origin is the function nr . The other curve represents the function $sF(r, 1)$. It is so drawn as to show diminishing marginal productivity of capital. At the point of intersection

¹We arrive at the fundamental equation thus

²Equation (5) helps to study the behaviour of the capital-labour ratio (K/L). To do this he introduces a new variable r for the capital-labour ratio thus $r = K/L$ or $K = rL$. Substituting (4) into this expression, we have

$$K = rL_{nr}^{-\alpha}$$

Differentiating with respect to time to get an equation for the rate of change of capital stock. The product rule of derivatives gives us

$$\frac{dK}{dt} = L_{nr}^{-\alpha} \cdot \frac{d}{dt}(r + r^{-\alpha}) \cdot L_{nr}^{-\alpha}$$

of the two curves $nr = sF(r, 1)$, and $\dot{r} = 0$. When $\dot{r} = 0$, the capital-labour ratio is a constant and the capital stock must expand at the same rate as the labour force, i.e., n . Once the capital-labour ratio r' is established, it will be maintained, and capital and labour will grow in proportion. Assuming constant returns to scale, real output will also grow at the same relative rate n , and output per head of labour force will be constant. At r' there will be the balanced growth equilibrium.

What will be the behaviour of the capital-labour ratio if there is a divergence between r' and r ? If r lies to the right of r' or $r > r'$ then $nr > sF(r, 1)$, and r will decrease toward r' . On the contrary, if r lies to the left of r' or $r < r'$, $nr < sF(r, 1)$, and r will increase toward r' . Thus the equilibrium value r' is stable. "Whatever the initial value of the capital-labour ratio, the system will develop toward a state of balanced growth at the natural rate. . . . If the initial capital stock is below the equilibrium ratio, capital and output will grow at a faster pace than the labour force until the equilibrium ratio is approached. If the initial ratio is above the equilibrium value, capital and output will grow more slowly than the labour force. The growth of output is always intermediate between those of labour and capital."

But the strong stability shown in the above figure is not inevitable. It depends on the shape of the productivity curve $sF(r, 1)$. In Fig. 30.2 the productivity curve $sF(r, 1)$ intersects the ray curve nr at three points r_1 , r_2 and r_3 . But r_1 and r_3 are stable equilibrium positions because the total productivity curve $sF(r, 1)$ is above nr but at r_2 it is below nr . Therefore, r_2 is an unstable equilibrium position. "Depending on the initial

$$\begin{aligned} K &= \dot{r}L_{oc}^{nt} + nrL_{oc}^{nt} \\ &= (\dot{r} + nr)L_{oc}^{nt} \end{aligned} \quad (\text{By taking } L_{oc}^{nt} \text{ as common})$$

Substituting (5) into it, we have

$$(\dot{r} + nr)L_{oc}^{nt} = sF(K, L_{oc}^{nt})$$

This tells us how capital is growing assuming that labour is fully employed and a fraction, s , of full employment output is saved in each period.

Assuming constant returns to scale which means that the production function is homogeneous of degree 1 we divide and multiply the above relation by L_{oc}^{nt} to get

$$(\dot{r} + nr) = sF\left(\frac{K}{L_{oc}^{nt}}, 1\right)$$

Taking nr to R.H.S.,

$$\dot{r} = sF\left(\frac{K}{L_{oc}^{nt}}, 1\right) - nr$$

Finally, writing r for the capital-labour ratio $\frac{K}{L_{oc}^{nt}}$ we get the Solow fundamental equation (6)

$$\dot{r} = sF(r, 1) - nr$$

observed capital-labour ratio, the system will develop either to balanced growth at capital-labour ratio r_1 or r_2 . In either case labour supply, capital stock and real output will asymptotically expand at rate n , but around r_1 , there is less capital than around r_2 , hence the level of output per head will be lower in the former case than in the latter. The relevant balanced growth equilibrium is at r_1 for an initial ratio anywhere

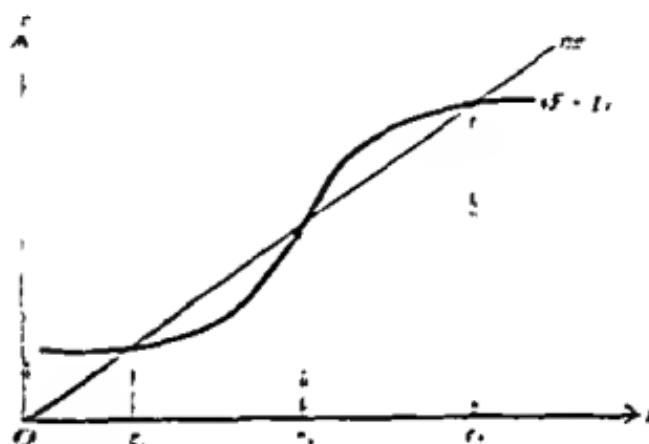


FIG. 30.2

between O and r_2 , or at r_1 for any initial ratio greater than r_1 . The ratio r_2 is itself an equilibrium growth ratio, but an unstable one, any accidental disturbance will be magnified over time. Figure 30.2 has been drawn so that production is possible without capital, hence the origin is not an equilibrium 'growth configuration'.

Solow points out that Fig. 30.2 does not exhaust all possibilities, as shown in Fig. 30.3. The ray OF depicts the equilibrium growth path where the warranted and actual rates of growth are equal. The curve $s(F)$ (all what is above it) represents a highly productive system in which capital and income increase more rapidly than the labour supply. In this system, which is of permanent full-employment, savings and exports therefore so much that the capital-labour ratio continues infinitely. On the other hand the curve $s(F + I)$ represents a

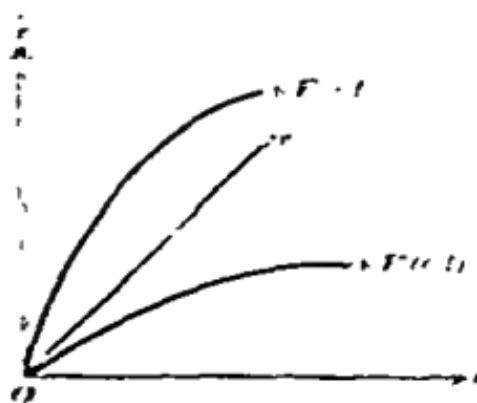


FIG. 30.3

of the two curves $nr = sF(r, 1)$, and $\dot{r} = 0$. Then $r = r'$. When $r = r'$, the capital-labour ratio is a constant and the capital stock must expand at the same rate as the labour force, i.e., n . Once the capital-labour ratio r' is established, it will be maintained, and capital and labour will grow in proportion. Assuming constant returns to scale, real output will also grow at the same relative rate n , and output per head of labour force will be constant. At r' there will be the balanced growth equilibrium.

What will be the behaviour of the capital-labour ratio if there is a divergence between r' and r ? If r lies to the right of r' or $r > r'$ then $nr > sF(r, 1)$, and r will decrease toward r' . On the contrary, if r lies to the left of r' or $r < r'$, $nr < sF(r, 1)$, and r will increase toward r' . Thus the equilibrium value r' is stable. "Whatever the initial value of the capital-labour ratio, the system will develop toward a state of balanced growth at the natural rate.... If the initial capital stock is below the equilibrium ratio, capital and output will grow at a faster pace than the labour force until the equilibrium ratio is approached. If the initial ratio is above the equilibrium value, capital and output will grow more slowly than the labour force. The growth of output is always intermediate between those of labour and capital."

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$$\begin{aligned}\dot{K} &= \dot{r}L_{oc}^{-n} + nrL_{oc}^{-n} \\ &= (\dot{r} + nr)L_{oc}^{-n}\end{aligned}$$

(By taking L_{oc}^{-n} as common)

Substituting (5) into it, we have

$$(\dot{r} + nr)L_{oc}^{-n} = sF(K, L_{oc}^{-n})$$

This tells us how capital is growing assuming that labour is fully employed and a fraction, s , of full employment output is saved in each period.

Assuming constant returns to scale which means that the production function is homogeneous of degree 1 we divide and multiply the above relation by L_{oc}^{-n} to get

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Taking nr to R.H.S.,

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observed capital-labour ratio, the system will develop either to balanced growth at capital-labour ratio r_1 or r_3 . In either case labour supply, capital stock and real output will asymptotically expand at rate n , but around r_1 there is less capital than around r_3 , hence the level of output per head will be lower in the former case than in the latter. The relevant balanced growth equilibrium is at r_1 for an initial ratio anywhere

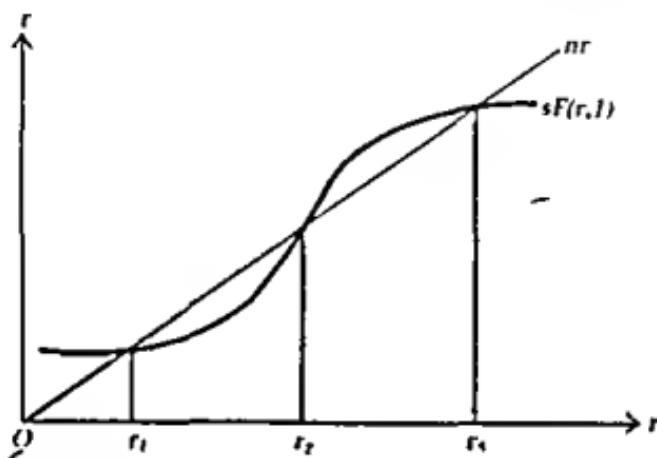


FIG 30.2

between O and r_2 , it is at r_3 for any initial ratio greater than r_2 . The ratio r_2 is itself an equilibrium growth ratio, but an unstable one, any accidental disturbance will be magnified over time. Figure 30.2 has been drawn so that production is possible without capital, hence the origin is not an equilibrium 'growth' configuration."

Solow points out that Fig. 30.2 does not exhaust all possibilities. He shows two more possibilities, as shown in Fig. 30.3. The ray nr depicts the equilibrium growth path where the warranted and natural rates of growth are equal. The curve $s_i F'(r, 1)$ which is above nr represents a highly productive system in which capital and income increase more rapidly than the labour supply. In this system, which is of perpetual full-employment, income and saving increase so much that the capital-labour ratio increases limitlessly. On the other hand, the curve $s_i F''(r, 1)$ depicts a highly

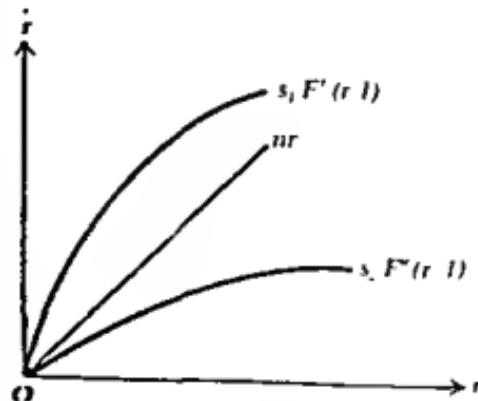


FIG 30.3

Chapter 31

KALDOR'S MODEL OF GROWTH

Professor Kaldor in his *A Model of Economic Growth*¹ follows the Harroddian dynamic approach and the Keynesian techniques of analysis. The other neo-classical models treat the causation of technical progress as completely exogenous, but Kaldor attempts "to provide a framework for relating the genesis of technical progress to capital accumulation."

Assumptions. The basic properties or assumptions of Kaldor's model are as follows:

1. It is based on the Keynesian full employment assumption in which the short-period supply of aggregate goods and services is inelastic and irresponsive to any increase in monetary demand.

2. It assumes that technical progress depends on the rate of capital accumulation. For this, Kaldor postulates "the technical progress function" which is a joint product of two tendencies: growth of capital and growth of productivity. The capital-output ratio will depend upon the relation between the two.

In Fig. 31.1 TT' is the technical progress function which is convex upwards but flattens out beyond a certain point, such as P in the figure, when capital per worker starts diminishing. The annual percentage growth in capital per

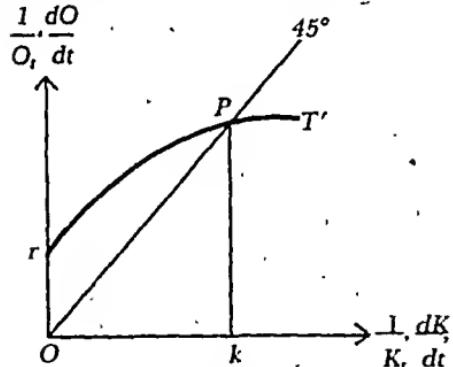


FIG. 31.1

worker at time t is $\left(\frac{1}{kt} \cdot \frac{dk}{dt} \right)$ measured horizontally and the annual percentage growth in income per worker at time t is $\left(\frac{1}{O_t} \cdot \frac{dO}{dt} \right)$ measured vertically. At point P , the percentage rate of growth of capital and the percentage rate of output (income) are equal. The behaviour of the capital-output ratio will depend upon the flow of new ideas, as re-

¹Economic Journal, Vol. 67, December 1957. Also in Essays on Stability and Growth, 1960, pp. 258-300.

presented by the shape and position of the TT curve and the rate of capital accumulation. If the rate of capital accumulation is less than the point of equality of the growth of capital, and the growth of output, the capital-output ratio will be falling and there will be labour-saving inventions, and vice versa. If the rate of capital accumulation is less than OK or one happens to be to the left of P , output will be growing faster than capital, the rate of investment will be stepped and the rate of profit on new investment will increase. This will lead to a movement towards the right till point P is reached. On the contrary, if one happens to be to the right of, capital will be growing faster than output, the rate of investment will decline, so will the profit rate and a backward movement towards P will set in till the equilibrium point is reached.

3. Income consists of wages and profits where wages comprise salaries and earnings of manual labour, and profits comprise incomes of entrepreneurs as well as property owners

4. Total savings consist of savings out of wages and savings out of profits.

5. It is assumed that the share of profits in total income is a function of investment, given the propensity to save out of profits

6. All macro-economic concepts of income, wages, profits, capital, saving and investment used in the model are expressed at constant prices.

7. Kaldor assumes an investment function which makes investment of any period partly a function of the change in output and partly of the change in the rate of profit on capital in the previous period

8. Monetary policy plays a passive role in the model in that money wages may be rising faster than productivity or *par passu* with productivity, or money wages may be constant.

9. It is assumed that there are no effects of a change in the share of profits and wages, and of a change in interest rates on the choice of techniques adopted

10. The choice of techniques is assumed to alter with the accumulation of capital and the progress of techniques in the capital goods making industries.

Given these assumptions, the model operates under two stages: (a) constant working population, and (b) expanding population. In the former, the proportionate growth rate of total real income will be the same as the proportionate growth rate of output per head. In the latter, the proportionate change in total real income is the sum of the proportionate change in output per head and the proportionate change in the total working population. We discuss these two versions of the model below.

(A) Constant Working Population. For the operation of the model,

Kaldor postulates three functions: (i) the savings function, (ii) the investment function, and (iii) the technical progress function. The three functions are explained in terms of linear equations as under:

(i) Savings function

$$S_t = \alpha P_t + \beta (Y_t - P_t) \quad \dots \quad (1)$$

where

$$1 > \alpha > \beta \geq 0$$

In equation (1), savings (S_t) consist of savings (α) out of profits (P_t) and savings (β) out of wages ($Y_t - P_t$) in period t . The inequalities $1 > \alpha > \beta \geq 0$ show that α and β lie between 0 and 1, and that α (savings out of profits) is greater than β (savings out of wages).

(ii) Investment function

$$K_t = \alpha' Y_{t-1} + \beta' \left(\frac{P_{t-1}}{K_{t-1}} \right) Y_{t-1} \quad \dots \quad (2)$$

$$I_t = K_{t+1} - K_t \quad \dots \quad (2.1)$$

where $\alpha' > 0$ and $\beta' > 0$

Equation (2) shows that the stock of capital (K_t) at time t is a coefficient α' of the output of the previous period (Y_{t-1}) and a coefficient β' of the rate of profit on capital of the period $\left(\frac{P_{t-1}}{K_{t-1}} \right)$ multiplied by the output of the previous period (Y_{t-1}). Equation 2.1 shows the investment function where investment in period t equals the stock of capital in the next period (K_{t+1}) minus the stock of capital in the current period (K_t). The inequalities $\alpha' > 0$, and $\beta' > 0$ reveal that the value of the coefficient α' and β' are greater than zero.

(iii) Technical progress function

$$\frac{Y_{t+1} - Y_t}{Y_t} = \alpha'' + \beta'' \frac{I_t}{K_t} \quad \dots \quad (3)$$

where

$$\alpha'' > 0, \text{ and } 1 > \beta'' > 0$$

Equation (3) shows that the rate of growth of income (and labour productivity) is an increasing function of the rate of net investment expressed as the proportion of the stock of capital (I_t/K_t) in period t multiplied by the capital per head β'' plus the coefficient of technical progress α'' . Here the value of the coefficient of technical progress is greater than zero but of capital per head lies between 0 and 1.

Given these functions, if we start from a point of time, $t=1$, the existing stock of capital K_1 can be regarded as a datum, inherited from the past. Taking Y_0 and K_0 as the income and capital of the previous period, Y_1 can be taken as the given income which the fully employed

labour force (constant population) produces with the help of the capital stock K_t .

The technical progress function as given by equation (3) shows the growth of income and capital from period t_1 onwards whereby the economy gradually moves from a short-period equilibrium to a long-period equilibrium of steady growth. Taking the identity $S_t = I_t$, it is the level of profits which brings about the equality of saving and investment. For a stable equilibrium path, the following condition should be fulfilled.

$$\alpha - \beta > \beta' \frac{Y_t}{K_t} \quad . (4)$$

This implies that the growth rate of savings should be greater than that of investment for the stable equilibrium. But this is only a necessary condition. The sufficient conditions for the stable equilibrium path should be

$$P_t \leq Y_t - w \quad . (5)$$

$$\frac{P_t}{Y_t} \geq m \quad . (6)$$

In fact, equations (5) and (6) are inequalities which act as constraints on the stability of the equilibrium path. Equation (5) indicates that the level of profits (P_t) should not exceed income minus wages ($Y_t - w$). While equation (6) indicates that the rate of profit (P_t/Y_t) should be greater than the minimum margin of profits (m) so that the entrepreneurs should continue to make further investments. Equations (4), (5) and (6), imply that the equilibrium brought about by the equality of saving and investment through the mechanism of profits would not be a stable one. However, the steady growth path would depend on the 'technical dynamism' of the economy, i.e., on the technical progress function, as given by the following condition

$$G = \frac{\alpha'}{1 - \beta'} \quad . (7)$$

where G is the growth rate of output which is determined by the technical progress function, as given on the right of the equation

This is illustrated in Figure 31.2 where the proportionate growth of capital $\left(\frac{K_{t+1} - K_t}{K_t} \right)$ is measured horizontally and the proportionate growth of income $\left(\frac{Y_{t+1} - Y_t}{Y_t} \right)$ vertically. Point G as determined by the technical progress function TT' and the 45° line is one of steady growth where the proportionate growth of income equals the proportionate growth of capi-

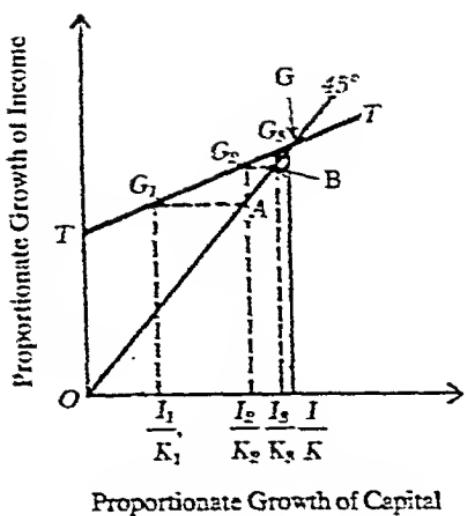


FIG. 31.2

tal. Starting from period t_1 where the growth of output G_1 is greater than the growth of capital (I_1/K_1), the rate of investment will increase in the subsequent period so as to make I_2/K_2 equal G_1 at A. This will, in turn, raise the growth of output in period t_2 to G_2 . The rate of investment will increase further to I_3/K_3 in period t_3 , so as to make I_3/K_3 equal G_2 at B. Similarly, the growth of output in subsequent periods will rise till point G is reached. This process will be reinforced by changes in the rate of profit on capital (P_t/K_t). An associated change in P_t/K_t will

make the increase in I_t/K_t even greater.

(B) Expanding Population. Leaving the assumption of constant working population, Kaldor studies the relation between growth in population and growth in income. Starting from the Malthusian contention that the growth rate of population is a function of the rate of increase of the means of subsistence, he assumes that: (a) "For any given fertility rate . . . the percentage rate of growth in population cannot exceed a certain minimum however real income is rising;" and (b) "the rate of population growth will rise moderately as a function of the rate of growth of income over some interval of the latter before that maximum is reached."

Given these assumptions, the relation of population growth with the growth in income is expressed by Kaldor algebraically as under:

$$I_t = g_t \quad (g_t \geq \lambda)$$

and

$$I_t = \lambda \quad (g_t \geq \lambda)$$

where I_t is the percentage rate of growth of population, g_t is the percentage rate of growth of income, and λ is the maximum rate of population growth. If $g_t < \lambda$ and so is $I_t > \lambda$, the rate of growth of income and population will continue to rise till the growth rate of population equals λ .

This relation between population growth and income growth is represented in Fig. 31.3. where the proportionate rate of

growth of population $\left(\frac{1}{L} \cdot \frac{dL}{dt} \right)$ is measured vertically and

proportionate rate of growth of income ($\frac{1}{Y} \cdot \frac{dY}{dt}$) is measured horizontally. OY is the growth path of income. $PL\lambda$ is the curve of the growth rate of population. As the growth rate of income increases, the growth rate of population also rises till the λ curve becomes horizontal as a level where the rate of growth of income (OY) exceeds the former, as at point E . In the long run, population would grow at its maximum rate indicated by L_λ portion of the dotted population-growth rate curve. This assumes that the shape and position of the technical progress function, as given by the coefficients α'' and β'' in equation (3) are not affected by the changes in population. This implies that there are constant returns to scale, that is, "an increase in numbers, given the amount of capital per head, leaves output per head unaffected."

But in an underdeveloped economy with a low capacity to absorb technical changes due to the scarcity of land and capital, the technical progress function will be lowered with the increase in the growth rate of population. In this situation, the technical progress function will cut the capital axis positively as at A in Fig. 31.4. This implies that in order to maintain output per head at a constant level, a certain percentage growth in capital per head will be required. We have therefore two points of intersection P' and P of the technical progress function. Point P' is of unstable equilibrium and point P of stable long-run equilibrium. If the rates of growth of income and capital continue to diminish in the economy, both

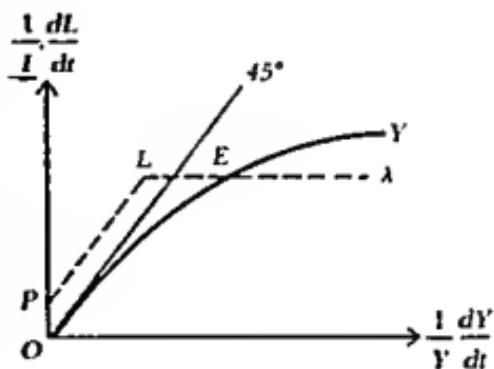


FIG. 31.3

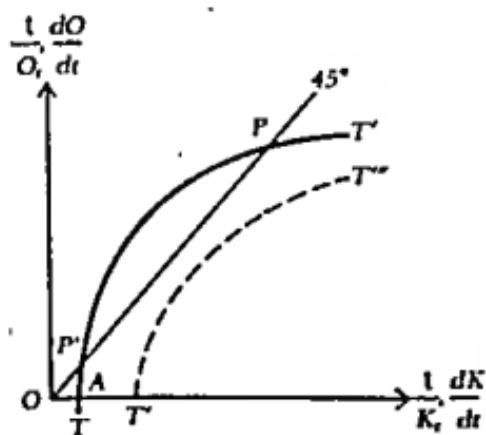


FIG. 31.4

the output per head and capital per head may cease to grow. This may happen if the economy is to the left of point P' . If this situation persists, the technical progress function TT' may slip down as the dotted curve $T''T'''$ in Fig. 31.4. In this situation, there will not be any long-run equilibrium. Rather, there may be stagnation in the economy.

The conclusion emerges from the above analysis that the growth in population will lead to long-run equilibrium growth in income depending upon the relative strength of the following two factors: "(i) the maximum rate of population increase λ and (ii) the rate of technical progress, which causes a certain percentage increase in productivity, α " in equation (3) above, when both population and capital per head are held constant."

A Critical Appraisal

Kaldor's model is based on the Keynesian tools of analysis and follows Harrod's dynamic approach in regarding the rates of change in income and capital as the dependent variables of the system. But his model is quite different from the Harroddian and other models. In Kaldor's own words, his model is a 'piece of economics that tries to show that the ultimate causal factor was not saving or capital accumulation, but "technical dynamism"—the flow of new ideas and the readiness of the system to absorb them."

Moreover, the model explains not only the steady growth path of the economy but also certain features of the growth process which are not explicitly dealt with by the other neo-classical model builders.

Again, the division of the model into two stages—constant population and expanding population—is an attempt to reconcile the Harroddian warranted and natural rates of growth by demonstrating the long-run tendency for the two to converge by mutual interaction. The expanding population version of the model is particularly useful in demonstrating the effect of population growth on the growth of income in underdeveloped countries.

One of the highlights of Kaldor's model is the introduction of the 'technical progress function' in place of the usual production function. The technical progress function relates technical progress to growth of productivity and capital accumulation, while the usual production function relates output per head to capital per head. Thus, the former is superior to the latter in that it brings in the role of income, wages, profits, capital, saving and investment.

Further, the technical progress function can be equally applied to an underdeveloped economy, having low capacity to absorb technical change due to the scarcities of capital and other resources. In such countries, the technical progress function will be at a level much below

the usual TT' curve shown in Fig. 31.1. However, with new discoveries and the increase in the capacity of such economies to absorb technical changes, the technical progress function may rise gradually. Thus Kaldor's growth model is more realistic than the earlier neo-classical models because it is equally applicable to developed as well as underdeveloped economies.

Despite these virtues of the Kaldor model, it is not free from certain weaknesses.

The Kaldor model does not explain the determination of the rate of growth of the economy, as has been explained in the Harrod-Domar models in terms of the volume of investment, saving-income ratio and the capital-output ratio.

Unlike the Harrod-Domar models, this model does not give the reasons for stability or instability in the economic system. Rather, it analyses certain features of the growth process which emphasise 'convergence and stability.'

But these drawbacks do not detract from the advance made by Kaldor in growth theory through this model which has been further elaborated and improved upon by him along with Mirrlees.²

²N. Kaldor and J.A. Mirrlees, "A New Model of Economic Growth," *R.E.S.* Vol. 29, 1961-62.

Chapter 32

MODELS OF TECHNICAL CHANGE

INTRODUCTION

The Harrod-Domar analysis is based on the assumption of fixed coefficients in production and thus gives rise to the famous 'knife-edge' problem. The neo-classical models also treat technical progress exogenously. Kendrick, Kaldor, and Solow, among others, have been the most consistent critics of this approach who have tried to demonstrate the role of technological changes in the growth of an economy. Before discussing the models of technical change, we shall attempt the basis of these models as enshrined in the controversy over neutral and non-neutral technical change.

NEUTRAL AND NON-NEUTRAL TECHNICAL CHANGE

A technical change is said to be neutral when it is neither capital-saving nor labour-saving. On the contrary, non-neutral technical change is either capital-saving or labour-saving. In the literature on growth economics, the two important definitions, pertaining to neutral and non-neutral technical change are by Hicks and Harrod.

Hicks Neutrality. According to Hicks,¹ an invention is said to be neutral when it raises the marginal productivities of labour and capital in the same proportion. In other words, a technical change is *neutral* if the ratio of the marginal product of capital to that of labour remains unchanged at a *constant capital-labour ratio*. Hicks-neutral technical change is explained in Fig. 32.1 by comparing points on two different production functions. The vertical axis measures output per man $q (= Q/L)$ where Q represents output and L labour inputs) and the horizontal axis the capital-labour ratio $k (= K/L)$ where K and L represent capital and labour inputs in physical units). OM measures the ratio between the marginal product of labour and capital. OP is the production function before the technical change and OP_1 is the production function after the technical change.

Taking the production function OP , the slope of the tangent MWA

¹The Theory of Wages, 2nd edn., 1963.

measures the marginal product of capital and OW measures the marginal product of labour. To prove that OM measures the ratio between the marginal product of labour and capital, take the triangle OWM . Since the slope of MW shows the marginal product of capital, say u , we can express it as

$$u = \frac{OW}{OM} \text{ or } OM = \frac{OW}{u}$$

Hence OM measures the ratio between the marginal product of labour (OW) and the marginal product of capital (u).

Hicks-neutral technical progress requires that if technical change shifts the production function upwards from OP to OP_1 , the ratios of the two marginal products must be the same on any vertical line from the X -axis, like KB , where it passes through the production functions at points A and B respectively. Again, for Hicks-neutral technical progress the condition is that the tangent (MB) on the higher production function (OP_1) must originate from the point (M) to the left of O , like the tangent before the technical change. In Fig. 32.1 the tangent MB on the production function OP_1 originates from M . When both the tangents MA and MB on the production functions OP and OP_1 originate from M , only then the ratios between the marginal products of labour and capital will be equal, i.e., the ratio between the marginal product of labour and capital after the technical progress, $\frac{OW_1}{u_1} = \frac{OW}{u}$

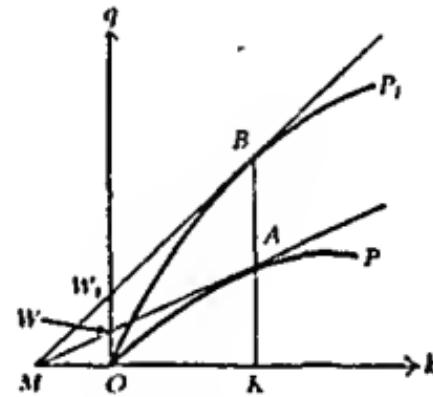


FIG 32.1

ratio between the marginal product of labour and capital before the technical progress. Hence, the ratio between the marginal product of labour and capital is equal at points A and B on the vertical line KB . We may conclude that as a result of Hicks-neutral technical progress, the output per head rises by AB but the capital-labour ratio (k) remains constant at OK . Thus Hicks-neutral technical change with represents a shift in the aggregate production $Q=F(K, L, t)$ can be expressed as

$$Q=A(t)F(K, L).$$

other hand, if the capital-output ratio falls with technical change at a constant rate of profit, then the technical change is *capital-saving*.

Harrod neutrality is explained with the help of Fig. 32.4 where capital per man (k) is measured along the X -axis and output per man (q) along the Y -axis. OP is the production function before the technical change and OP_1 is the production function after the technical change. The capital-output ratio at point A on the production function OP is OK_1/OY_1 and at point B on the production function OP_1 is OK_2/OY_2 . Since the ray OR passes through both the points A and B , the capital-output ratios at these points are equal, i.e., $OK_1/OY_1 = OK_2/OY_2$.

Harrod-neutrality also requires that the rate of profit must remain constant along with a constant capital-output ratio after technical progress. This means that the marginal productivity of capital (or rate of profit) must be the same at points A and B on the production functions OP and OP_1 respectively. This, in turn, requires that the slope of the

production function OP at point A must equal the slope of the production function OP_1 at point B . In other words, it means that the tangents at A and B must be parallel to each other. In the figure, the tangent TG at point A is parallel to the tangent T_1G_1 at B . Thus Harrod-neutral technical change, as shown by the shifting of the production function OP upwards to OP_1 , depicts the equality of the capital-

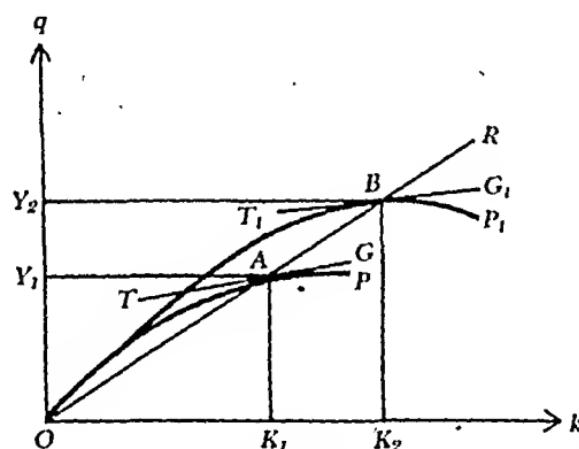


FIG. 32.4

output ratio at A and B as represented by the ray OR passing through them, and also the equality of the slopes of the tangents at A and B thereby showing a constant rate of profit. We draw certain implications of the Harrod neutrality. Harrod's definition of neutral technical progress is superior to that of Hicks because it is applicable to a dynamic situation rather than to a static situation. As such, it forms an important part of the theory of economic growth because it uses the concept of the capital-output ratio which is indispensable in modern growth analysis. Assuming constant returns to scale, changes in the capital-output ratios can come about only through technical changes.

Moreover, in Harrod-neutral technical change there is no direct

reference to labour because it is entirely based on the relationship between capital and output. Still, capital-labour ratio and output-labour ratio may change without technical progress. But with a constant capital-output ratio, Harrod-neutral technical progress will not by itself change the capital-labour ratio. However, a Harrod-neutral innovation may raise the productivity of all types of labour engaged in making and operating machines in exactly the same proportion as the output from these machines. In other words, it means that under Harrod neutrality the rise in the output per machine would be in the same proportion as the rise in the output per man.

Another implication of the Harrod neutrality is with regard to the distribution of factor shares in national output. Under Harrod-neutral technical progress, the shares of capital and labour in national output are constant if the capital-output ratio and the rate of profit are constant at A and B in Fig. 32.4. We may also say that when labour and capital are producing a product and there is Harrod-neutral technical change, it would raise the wages and profits of both, proportionately to the increase in output. In this context, the assumption of a constant capital-output ratio implies that the capital stock and the labour force grow at the same rate. It is then that the incomes of the capitalists would grow at the same speed at which the wages of the workers rise. If a technical progress is capital-saving in Harrod's sense, this will raise the share of labour in national output and reduce that of capitalists, given a constant rate of interest. On the other hand, a labour-saving technical progress will reduce the share of labour in national output and increase that of capitalists, with a constant rate of interest.

Harrod neutrality can be shown in the form of a production function as

$$Q = F[K, A(t)L]$$

Here Q is a function F of K and $A(t)L$ which means that the given constant returns to scale on equal proportionate rise in capital (K) and in effective labour units [$A(t)L$] must lead to an equal proportionate rise in national output (Q). With the rate of interest being constant, the efficiency of labour increases in the whole economy. With population growth, there is an increase in the number of men at work. Harrod-neutral technical progress increases the amount of work each man can do. The result is that, both with population growth and with Harrod-neutral technical progress, the GNP rises at a given rate. The difference is that, with Harrod-neutral technical progress, income per head (real wage per head) increases; with population growth it remains the same. As Joan Robinson and Uzawa have shown, on the strict definition, Harrod-neutral technical progress raises income,

rate whatever the (constant) level of the capital-output ratio. It is this rate which measures technical progress."⁴ This formulation of Harrod-neutrality has been described as 'pure labour augmenting technical progress.' Solow⁵ has, however, shown that Harrod-neutrality can be purely 'capital augmenting technical progress' with the production function.

$$Q=F[A(t)K, L]$$

Here $A(t)$, the index of technical progress, has been prefixed to K instead of to L , unlike as in the labour augmentation case.

Economists have shown on the basis of Joan Robinson's⁶ analysis that technical progress is both Hicks-neutral and Harrod-neutral if the elasticity of substitution between labour and capital is unity and there is no change in the distribution of income. There is neutral technical change in Hicks' sense if with given labour force capital remains unchanged and the distribution of income is the same. It is Harrod-neutral if with given labour force, capital increases in the same proportion as national output and the distribution of income is the same.

We examine briefly the extent to which these concepts of neutrality have been used by economists in building models of technical change with particular reference to Solow's contribution.

DISEMBODIED AND EMBODIED TECHNICAL CHANGE

Disembodied Technical Change. In 1956 Abramovitz wrote the first paper followed by Kendrick and Solow in an attempt to measure the contribution of technical change to economic growth.⁷ They treated technical change as "disembodied." *Disembodied technical change is purely organisational which permits more output to be produced from unchanged inputs, without any new investment.* Disembodied technical change refers to any kind of shift in the production function that leaves the balance between capital and labour undisturbed in the long run. The production function for such technical change is

$$Q=F(K, L; t), \quad . . . (1)$$

.. pp. 637-38.

Solow, *Capital Theory and the Rate of Interest*, 1963.

Robinson, "The Classification of Inventions," *Review of Economic Studies*, 1938.

Abramovitz, "Resources and Output Trends in the United States since 1870," *May* 1956; J.W. Kendrick, "Productivity Trends: Capital and Labour," *R.E.S.*, ; R.M. Solow, "Technical Change and the Aggregate Production Function," *usl* 1957.

where Q represents output, and K and L represent capital and labour inputs, and t represents technical change.

Taking Hicks-neutral technical change as the basis, Solow postulated the production function in the special form as

$$Q = A(t)F(K, L) \quad \dots \quad (2)$$

where $A(t)$ is an index of technical change or measures the cumulated effects of shifts over time. "Such a production function implies that technical progress is organisational in the sense that its effect on productivity does not require any change in the quantity of the inputs. Existing inputs are improved or used more effectively."

The growth rate of output (\dot{Q}/Q) is equal to the rate of technical change (A/A) plus a weighted average of the growth rate of capital (\dot{K}/K) and the growth rate of labour (\dot{L}/L). Assuming linear homogeneous production function, these weights add to one and we have,

$$\frac{\dot{Q}}{Q} = \frac{A}{A} + \alpha t \frac{\dot{K}}{K} + (1-\alpha t) \frac{\dot{L}}{L} \quad \dots \quad (3)$$

where dots indicate time derivatives and αt is the capital elasticity of output.

Relying on the United States time series where capital and output grew at approximately the same rate, Solow proceeded to focus on the rate of technical change "By using data on the share of capital and labour, and the rates of growth of capital per head and output per head, the contribution of the 'residual' is obtained after calculating the contribution of capital. This residual is attributed to technical progress." Solow came to the conclusion that during 1909-49 the average growth rate of output per head in the United States could be attributed 12.5 per cent to the increase in capital per worker and the residual 87.5 per cent to technical change.

Its Criticism. These conclusions tended to undermine the role of investment in contrast to technical change in the growth process. In the words of Phelps, "The results of this approach produced a wave of investment pessimism." Whereas, according to Rosenberg, "they provoked a wide response on the part of economists wakened, as it were, from their dogmatic slumber." They became sceptical about such a large size of the 'residual.' As Abramovitz admitted, "It is a measure of our ignorance." Griliches observed that the 'residual approach' is not of much use in understanding the growth process because it is based on the concept of a production function which is not very useful if it is not a stable production function and if there are very large unexplained shifts in it. Critics further pointed out that the 'residual approach' tended to

ignore other influences like improvements in the quality of labour due to education, etc. Further, this approach is based on the unrealistic assumptions of perfect competition, constant returns to scale and complete homogeneity of the capital stock. Therefore, Denison, Kendrick, Griliches and others tried to quantify and break down the residual into further components. They contended that the 'residual' was not a catch-all and that changes in output were due to changes in the quantities and qualities of inputs, in economies of scale and advances in knowledge rather than the result of technical change, assuming a stable production function.

Embodied Technical Change—Vintage Approach: In an alternative model entitled⁸ *Investment and Technical Progress* (1960), Solow himself modified the residual approach based on disembodied technical change in which capital stock is regarded as homogeneous and technical change floats down from the outside. "In this model new capital accumulation is regarded as the vehicle to technical progress. Technical progress increases the productivity of machines built in any period compared with machines built in the previous period, but it does not increase the productivity of machines already in existence. Technical progress is 'embodied' in new machines. Machines unalterably embody the technology of their date of construction. Machines built at different dates... are therefore qualitatively dissimilar, and cannot in the general case be aggregated into a single measure of capital. A separate production function is needed for each vintage. Total output is the sum of output of all the vintages in use."⁹

Assumptions. This model assumes that: (a) capital stock consists of machines of different vintages i.e., built at different dates; (b) new machines are more productive than machines of older vintage; (c) technical change proceeds at some given proportional rate; (d) technical change affects only new machines; (e) all technical progress is uniform; (f) machines embody all the latest knowledge at the time of construction but do not share in any subsequent improvements in technology; (g) only gross investment in new machines is considered in the model; (h) and the production function is linear homogeneous of the Cobb-Douglas type.

Given these assumptions, the total output $Qv(t)$ at time t from the machines of each vintage v is given by a Cobb-Douglas production function

$$Qv(t) = Be^{\lambda v} L\nu(t)^{\alpha} K\nu(t)^{1-\alpha} \quad \dots (1)$$

⁸Mathematical Models in Social Sciences. (ed.) Arrow, Karlin and Suppes.

⁹F.H. Kahn and R.C.O. Mathews, "The Theory of Economic Growth." A Survey, *Economic Journal*, Vol. 74, 1964. Italics mine.

where $B e^{\lambda v}$ is the level of technology increasing neutrally and exponentially at the rate λ ; $L\nu(t)$ represents the quantity of labour operating the surviving stock of capital or vintage v at time t ; $K\nu(t)$ denotes the number of machines of vintage v still in existence at time $t \geq v$; and α and $1-\alpha$ are elasticities of output with respect to labour L and Capital K .

Taking the quantity $K\nu(t)$ for gross investment which is the output of capital goods at time v , Solow symbolises it by $I(v)$. If capital goods are exposed to a constant force of mortality (depreciation) δ , then the average length of life of capital is $1/\delta$ and gross investment

$$K\nu(t) = K\nu(v)e^{-\delta(t-v)} = I(v)e^{-\delta(t-v)} \quad . \quad (2)$$

"The picture is one of a continuum of capital goods of various vintages and corresponding productivity, subject to an exponential life table, according to Solow. At each moment of time the labour force is reshuffled over the existing capital goods. Thus total output is determined by integrating over all layers of capital stock."

With regard to the contribution of labour to total output with the given stock of capital, Solow states that if we assume competition in the labour market, all homogeneous labour must receive the same wage regardless of the age of capital on which it operates

$$W_t = \frac{dQ\nu(t)}{dL\nu(t)} = \alpha B e^{\lambda v} L\nu(t)^{\alpha-1} K\nu(t)^{1-\alpha} \quad . \quad (3)$$

$$\text{or } L\nu(t)^{\alpha-1} = \frac{W_t}{\alpha B e^{\lambda v} K\nu(t)^{1-\alpha}} \quad [\text{If } xy=z \Rightarrow x=z/y]$$

$$\text{or } L\nu(t)^{\alpha-1} = \frac{W_t}{\alpha B e^{\lambda v} [I(v)e^{-\delta(t-v)}]^{1-\alpha}} \quad [\therefore K\nu(t) = I(v)e^{-\delta(t-v)}]$$

$$\begin{aligned} \text{or } L\nu(t) &= \left[\frac{W_t}{\alpha B e^{\lambda v} [I(v)e^{-\delta(t-v)}]^{1-\alpha}} \right]^{\frac{1}{\alpha-1}} \\ &= W_t^{\frac{1}{\alpha-1}} - \frac{1}{(\alpha B)^{\frac{1}{\alpha-1}}} - \frac{\lambda v}{e^{\frac{1}{\alpha-1}}} I(v)e^{-\delta(t-v)} \\ &= W_t^{\frac{1}{\alpha-1}} - \frac{1}{(\alpha B)^{\frac{1}{1-\alpha}}} - \frac{\lambda v}{e^{\frac{1}{1-\alpha}}} I(v)e^{-\delta t} e^{\delta v} \end{aligned}$$

6. This model concentrates only on technological progress as embodied in new machines and ignores the problems of inducing innovations through the process of learning and investment in research.

Chapter 33

STEADY-STATE GROWTH

MEANING

The concept of steady-state growth is the counterpart of long-run equilibrium in static theory. It is consistent with the concept of *equilibrium growth*. In steady-state growth all variables, such as output, population, capital stock, saving, investment, and technical progress, either grow at constant exponential rate, or are constant.

Taking different variables, some of the neo-classical economists have given their interpretations to the concept of the steady-state growth. To begin with Harrod, an economy is in a state of steady growth when $Gw = Gn$. Joan Robinson described the conditions of steady-state growth as a Golden Age of accumulation thus indicating a "mythical state of affairs not likely to obtain in any actual economy." But it is a situation of stationary equilibrium. According to Meade, in a state of steady growth, the growth rate of total income and the growth rate of income per head are constant with population growing at a constant proportionate rate, with no change in the rate of technical progress.

In 1958, Professor Kaldor summed up six factors that have led to the growth of advanced industrial economies. These he termed as "the stylized facts" which a growth model must explain. They are summarised as under.

(1) The growth rate of real output per man-hours is fairly constant over long periods of time. In other words, the growth rates of output and labour input are constant over time.

(2) The growth rate of the capital stock is fairly constant but greater than the growth rate of labour force. Thus capital-labour ratio increases through time.

(3) The growth rate of the capital stock and the growth rate of real output is about the same. So the capital-output ratio is constant and shows no definite trend over time.

(4) The profit rate, defined as the ratio of profits (P) to the capital stock (K) is fairly constant over the long run. With a constant capital-output ratio, it means constant relative shares of labour and capital in national output.

(5) The growth rate of output per man can change considerably from one country to another.

and while s , n and m remain constant.

This situation is explained in Fig. 33.1 where capital-labour ratio (or capital per man) is taken on the horizontal axis and output per man is

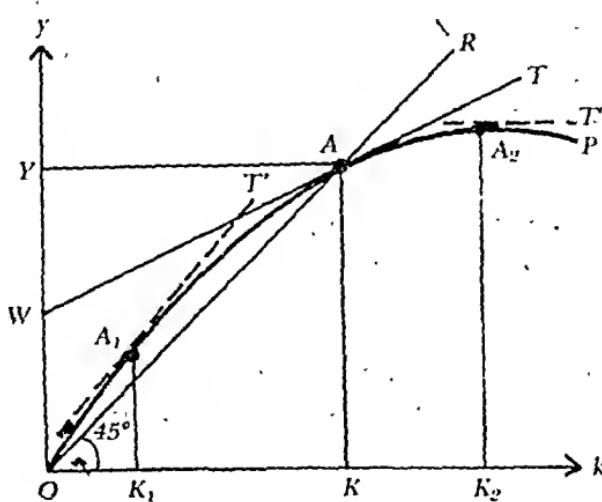


FIG. 33.1

taken on the vertical axis. The 45° line OR represents capital-output ratio where the warranted growth rate equals the natural growth rate. Every point on OR also shows a constant capital-labour ratio. OP is the production function which measures the marginal productivity of capital. It also expresses the relation between output per man (y) and capital per man (k). The tangent WT to the production function OP indicates the rate of profit at point A corresponding to the marginal productivity of capital. It is at this point A that the warranted growth rate equals the natural growth rate, i.e., $s/v = n+m$. Here the share of profit is WY in national income OY , and OW is the wage per man. Assume a situation K_2 where the stock of capital is above the equilibrium stock. It indicates that the capital-labour ratio is above the full employment equilibrium level ratio at A_2 . Thus, there is some idle capital which cannot be utilised and the rate of profit declines (which can be shown by the joining tangent T''' at A_2 to the Y -axis where it shall be above OW) till it reaches point A of steady-state growth. The opposite is the case at K_1 where the growth rate of capital accumulation is higher than that of labour force. The rate of profit increases at A_1 (which can be shown by joining the tangent T' to the Y -axis where it shall be below OW) till the steady-state growth point A is reached. In the Harrod-Domar model there is a single point of equilibrium A on the production function OP because the capital-output ratio (v) is fixed. But in the neo-classical model there is a continuous production function

along which the capital-output ratio is a variable and if the economy is thrown off the steady-state level A , it will itself return to it by variations in the capital labour ratio. Thus the equilibrium value of K is stable.

3. Flexibility of the Saving Ratio (s)

The Harrod-Domar model is also based on the assumption of a constant saving-income ratio (s). Kaldor and Pasinetti have developed the hypothesis which treats the saving-income ratio as a variable in the growth process. It is based on the classical saving function which implies that savings equal the ratio of profits to national income.

The hypothesis is that the economy consists of only two classes, the wage-earners and the profit-earners. Their savings are a function of their incomes. But the propensity to save of profit-earners (sp) is higher than that of wage-earners (sw). As a result, the overall saving ratio of the community depends on the distribution of income.

A special case of this hypothesis is where the propensity to save out of wages is zero ($sw=0$) and the propensity to save out of profits is positive and constant. Thus the overall propensity to save (S) is equal to the propensity to save of profit-earners (sp) multiplied by the ratio of profits (π) to the national income (Y), i.e., $S=sp.\pi/Y$. This is the classical saving function. There is also the 'extreme' classical saving function where all wages are consumed ($sw=0$) and all profits are saved ($sp=1$). Hence the saving-income ratio $s=\pi/Y$.

With a constant capital-output ratio (v) and a variable saving-income ratio (s), steady-state growth can be maintained through the distribution of income. So long as the saving-income ratio (s) required to satisfy the condition $s/v=n+m$ is not less than the propensity to save of wage-earners ($sw=0$) and not greater than the propensity to save of profit-earners ($sp=1$), steady-state growth will be maintained.²

4. Flexible Saving Ratio (s) and Flexible Capital-Output Ratio (v)

Steady-state growth can also be shown by taking both the saving-income ratio and the capital-output ratio as variables. With the classical saving function given by $sp.\pi/Y$, the warranted growth rate $s v$ can be written as:

$$Gw = \frac{s}{v} = \frac{sp\pi}{Y} \cdot \frac{Y}{K} = \frac{sp\pi}{K} \quad \left[\because s = sp.\pi/Y \quad v = K/Y \right]$$

where π/K is the rate of profit on capital which can be denoted by r . Thus the warranted rate becomes spr . For steady-state growth,

²For details refer to the *Kaldor Model of Distribution* and the *Pasinetti Model of Profit and Growth*

$spr = n + m$, whereby the warranted rate becomes equal to the natural rate of growth. In the special case where $sp = 1$ equilibrium between the two is reduced to $r = n + m$.

The diagrammatic representation of a variable saving ratio and a variable capital-output ratio is given in Fig. 33.2. OP is the production function whose slope measures the marginal productivity of capital (r) at any capital-output ratio on a point on OP . Equilibrium takes place where the tangent WT touches the OP curve at point A .

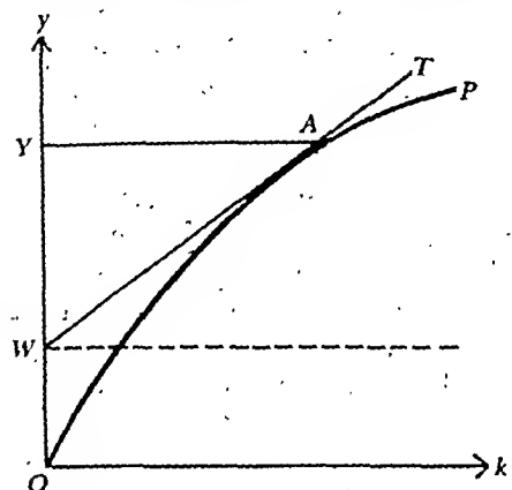


FIG. 33.2

The tangent WT originates from W and not from O because savings taking place out of non-wage income WY . Point A indicates the rate of profit corresponding to the marginal productivity of capital. In other words, at

point A labour and capital receive the rewards equal to their marginal productivities. OW is the wage rate (the marginal productivity of labour) and Wy is the profit (the marginal productivity of capital). Thus the steady-state equilibrium exists at A .

5. Technical Progress (m)

The Harrod-Domar model assumes no technical progress. If technical progress is introduced it may be either Hicks-neutral technical progress or Harrod-neutral technical progress. The two types of technical progress permit steady-state growth. They have been discussed in detail under *Neutral and Non-Neutral Technical Change* in the previous chapter.

Chapter 34

THE FEL'DMAN MODEL

G.A. Fel'dman was a Russian economist who wrote an article 'On the Theory of National Income Growth' which was published in *The Planned Economy*, the journal of the Soviet State Planning Commission (GOSPLAN) in 1928. It is a theoretical model which is concerned with long-run planning.¹

Assumptions. The Fel'dman model is built around the following assumptions :

1. It assumes constant prices in the economy
2. Capital is assumed to be the only limiting factor
3. There are no lags in the growth process
4. There is a closed economy
5. There are two sectors in the economy—the consumer goods sector and the capital goods sector
6. Production is assumed to be independent of consumption
7. There is no government expenditure except on consumption and investment.
8. There are no bottlenecks in the economy.
9. The supply of labour is unlimited

Given these assumptions, Fel'dman based his model on the Marxian division of the total output of an economy (W) into category 1 and category 2. The former relates to capital goods meant for both producer goods and consumer goods, while the latter category relates to all consumer goods including raw materials for them. The production of each category is expressed as the sum of constant capital (C), variable capital (wages), V , and surplus value S . It can be shown as

$$\begin{aligned} W_1 &= C_1 + V_1 + S_1 \\ + W_2 &= C_2 + V_2 + S_2 \\ \hline W &= C + V + S \end{aligned}$$

"The division of the economy between the two categories is complete, in the sense that no existing capital can be transferred from one to

¹The Fel'dman Model has been translated and interpreted in English by Evesy D Domar, *Essays in the Theory of Economic Growth* (1957), Essay IX. Our analysis is based on Professor Domar's interpretation.

another. Thus the rate of investment is rigidly determined by the capital coefficient and the stock of capital in category 1. Similarly the output of consumer goods is determined by the stock of capital and the capital coefficient of category 2. Hence the division of total output between consumption and investment at any given moment depends on the relative productive capacities of the two categories. The division of total investment (that is, of output of category 1) between the two categories is, however, completely flexible. Indeed the fraction of total investment allocated to category 1 is the key variable to the model."

In this two-sector model he demonstrated that if

γ = the fraction of total investment allocated to category 1;

I = the annual rate of net investment allocated to the respective categories, so that $I=I_1+I_2$;

t = the time measured in years;

V = the marginal capital coefficient for the whole economy;

V_1 and V_2 = the marginal capital coefficients of the respective categories;

C = the annual rate of output of consumer goods;

Y = the annual net rate of output of the whole economy or national income;

α = the average propensity to save;

α' = the marginal propensity to save;

I_0 , C_0 and Y_0 = the respective initial magnitudes of these variables (when $t=0$); the annual rate of net investment allocated to category 1 is given by $I_1=\gamma I$. And since only I_1 increases the capacity of category 1, it is shown by

$$\frac{dI}{dt} = \frac{I_1}{V_1} = \frac{\gamma I}{V_1} \quad [\because I_1 = \gamma I]$$

In time t , total investment will grow at an exponential rate

$$I = e^{\gamma/V_1 t} \quad \dots (1)$$

In other words, total investment will grow at a constant exponential rate of γ/V_1 .

Similarly, the annual rate of net investment allocated to category 2 is given by $I_2=(1-\gamma)I$. And I_2 being the source of increased capacity in category 2,

$$\frac{dC}{dt} = \frac{I_2}{V_2} = \frac{(1-\gamma)}{V_2} e^{\gamma/V_1 t} \quad [\because I = e^{\gamma/V_1 t}]$$

The annual rate of output of consumer goods is given by

$$C=C_0 + \left(\frac{1-\gamma}{\gamma} \right) \frac{V_1}{V_2} (e^{\gamma/V_1 t} - 1) \quad \dots (2)$$

The elements which determine the national income and the growth rate of the economy are given by

$$Y = I + C$$

By substituting the values of I and C in the above equation,

$$Y = e^{\gamma/v} I^t + C_0 + \left(\frac{1-\gamma}{\gamma} \right) \frac{V_1}{V_2} (e^{\gamma/v} I^t - 1) \quad [\text{From (1) and (2)}]$$

$$Y = e^{\gamma/v} I^t - 1 + 1 + C_0 + \left(\frac{1-\gamma}{\gamma} \right) \frac{V_1}{V_2} (e^{\gamma/v} I^t - 1)$$

$$= (e^{\gamma/v} I^t - 1) + 1 + C_0 + \left(\frac{1-\gamma}{\gamma} \right) \frac{V_1}{V_2} (e^{\gamma/v} I^t - 1)$$

$$= (e^{\gamma/v} I^t - 1) [1 + C_0 + \left(\frac{1-\gamma}{\gamma} \right) \frac{V_1}{V_2} + 1]$$

Assuming $I_0 = 1$, the equation becomes

$$Y = I_0 + C_0 + \left[\left(\frac{1-\gamma}{\gamma} \right) \frac{V_1}{V_2} + 1 \right] (e^{\gamma/v} I^t - 1)$$

$$\text{or } Y = Y_0 + \left[\left(\frac{1-\gamma}{\gamma} \right) \frac{V_1}{V_2} + 1 \right] (e^{\gamma/v} I^t - 1) \quad [\because Y_0 = I_0 + C_0]$$

The fundamental equation shows that C and Y each represent a sum of a constant and an exponential in t . Their rates of growth will differ from γ/V_1 . The values of C and Y will be greater than the value of I . With the passage of time, the exponential $e^{\gamma/v} I^t$ will dominate the scene and the rates of growth of C and Y will gradually approach γ/V_1 . But this may take quite a long time, unless of course it so happens that

$C_0 = \left(\frac{1-\gamma}{\gamma} \right) \frac{V_1}{V_2}$, in which case the constants will vanish, and C and Y will grow at the rate of γ/V_1 from the very beginning."

Comparison with the Domar Model

In the Domar model, the average propensity to save (α) is equal to the marginal propensity to save (α'), i.e., $\alpha = \alpha'$. But in the Feldman model $\alpha = \alpha'$. To compare the Domar model with the Feldman model, it is necessary to rework their results without the assumption that $\alpha \neq \alpha'$, treating α' as a constant. But since $\alpha = \alpha'$, α has now become a variable. The rate of growth of investment will now be α'/v while that of income α/v (by disregarding the difference between α and s ; s being the reciprocal of v). The expression α'/v is the ratio of marginal propensity to save to the over-all capital coefficient. In

Fel'dman's model, however, we have obtained γ/V_1 as the growth rate of investment where γ is the fraction of investment allocated to category 1 and V_1 is the capital coefficient of this category only. In the special case when $V_1 = V_2$ we obtain $\alpha = \gamma$, that is Fel'dman's fraction of investment allocated to category 1 and the marginal propensity to save become identical. If $V_1 > V_2$, then $\gamma > \alpha'$. When $V_1 = V_2$, Fel'dman's γ and Domar's α' are closely related. "But it is merely a reflection of the fact that if a certain fraction of increment in national income (α') is to be devoted to investment, a corresponding fraction of investment (γ) must be allocated to capital goods industries to make the production of this increment in investment possible. In other words, in a growing economy some capital is used to make more capital."

Implications for Economic Development

The Fel'dman model has important implications for economic development. Since $V_1 = V_2$, the expressions I , C and γ in the model are all inverse functions of V_1 and V_2 . Fel'dman treated the magnitudes of his capital coefficients as variables for the purpose of economic development. If the purpose of economic development is the maximisation of investment or national income at a point of time, or of their respective rates of growth, or of integrals overtime, γ should be set as high as possible. This is always true for investment and nearly always for income, the only exception being when V_1 greatly exceeds V_2 and even then for a short period of time. A high γ does not imply, however, any reduction in consumption. With capital assets assumed to be permanent, even $\gamma=1$ would merely freeze consumption as its original level. If assets were subject to wear, consumption would be slowly reduced by failure to replace them. Finally, a transfer of resources from consumption to investment industries would reduce consumption still further, though the latter possibility is excluded from the Fel'dman model.

Summing up the Fel'dman model, Professor Domar observes that "it contains an important element of truth: a closed economy without well-developed metal, machinery and subsidiary industries (the complex of the so-called heavy industries) is unable to produce a sizable quantity of capital goods and thus to invest a high fraction of its income, however, high its *potential* saving propensity may be. In Soviet economic thinking the former consideration has been predominant; in our recent literature the ability to save has been emphasized." This was because he felt that more could be achieved with greater utilization of capital than from its expansion as happened in Russia from 1924-25 through 1927-28. He, therefore, favoured a fall in the magnitudes of his capital coefficients.

But his own analysis of data given in the optimal version of the First

Five Year Plan of Russia indicated movement and variation in coefficients of specific industries, while the average for the whole economy remained almost unchanged at 2.4 for every year for the period 1925-26 to 1932-33. However, in the two versions of his own long-run plan, he showed in the first an almost constant capital coefficient at 2.4 for the period 1926 to 1932 which gradually rose to 3.3 in 1950; and in the second, a sharply declining coefficient to about 2.0 in 1930 which stabilised at 1.4 over the period 1932-50. The purpose of working out such contrasting versions was to illustrate the effect of the variation in the size of the capital coefficient on the growth rate of national income.

Treating the capital coefficient as given, the variable γ (the fraction of total investment allocated to category 1) can be varied as an instrument of planning. Since there is complete intra-category flexibility γ can vary between zero and one. But the choice of the optimum size of γ will depend on the objective of economic development.

But the Fel'dman model does not determine the magnitude of capital coefficient because no attempt is made to relate it to any other variables, such as the desirability of the assets, the length of the construction period, the supply of labour and of other factors like the magnitude, composition and the rate of growth of investment and the industrial structure.

Moreover, it is difficult to distinguish clearly between consumer goods and capital industries, when a large number of industries are in the nature of intermediate goods industries which help produce both consumer goods and capital goods. For instance, metals, coal, transportation, chemicals, petroleum, power, etc. are some of the industries whose goods and services are used in both categories of Fel'dman. "Perhaps Fel'dman could claim that in the Russia of his day, practically all metals were used in Category 1 only. But what would he say about the rest? Nor would it help to divide an industry (like coal or transportation) between two categories, because the respective proportions would by their very nature lack stability. Of course, any division of an economy by industries, or even of output between consumption and investment, is difficult and arbitrary but it is clear that Fel'dman's method creates special difficulties."

Chapter 35

THE MAHALANOBIS MODEL

INTRODUCTION

In October 1952, Mahalanobis developed a single-sector model based on the variables of national income and investment. It was further developed into a two sector model in 1953 where the entire net output of the economy was supposed to be produced in only two sectors—the investment goods sector and the consumer goods sector. Next he developed the famous *four-sector model* in 1955. We discuss his two-sector and four-sector models.

1. TWO-SECTOR MODEL

It was Mahalanobis's two-sector¹ model which became the basis for his formulation of the four-sector model for the Second Five Year Plan. The *Mahalanobis two-sector model* was based on the following assumptions:

- (a) It is related to a closed economy where there is no foreign trade.
- (b) The economy consists of two sectors: the consumer goods sector and the capital goods sector. There is no intermediate sector. The industries producing intermediate goods are grouped together with the consumer goods and the capital goods which they help to produce.
- (c) There is total non-shiftability of capital equipment once installed in any of the sectors. But products of the capital goods sector can be used as inputs in the two sectors.
- (d) There is full capacity production in the consumer goods sector as well as in the capital goods sector.
- (e) Investment is determined by the supply of capital goods.
- (f) There are no changes in prices.

Given these assumptions, Mahalanobis divides the economy into two parts: λ_k , the proportion of net investment used in the capital goods sector and λ_c , the proportion of net investment used in the consumer goods sector

¹P.C. Mahalanobis, "Some Observations on the Process of Growth of National Income," *Sankhya*, September 1953. This model turned out to be almost identical with the Fel'dman model.

$$\lambda_k + \lambda_c = 1 \quad \dots (1)$$

Further, net investment (I) can be divided into two parts at any point of time (t). one, $\lambda_k I_t$ to increase the productive capacity of the capital goods sector and $\lambda_c I_t$ of the consumer goods sector. In this way

$$I_t = \lambda_k I_t + \lambda_c I_t \quad \dots (2)$$

Taking β_k and β_c as the output-capital ratios of the capital goods sector and the consumer goods sector respectively and β as the total productivity coefficient, the latter can be shown as

$$\beta = \frac{\beta_k \lambda_k + \beta_c \lambda_c}{\lambda_k + \lambda_c}$$

But

$$\lambda_k + \lambda_c = 1$$

$$\beta = \beta_k \lambda_k + \beta_c \lambda_c$$

$$\dots (3)$$

The income identity equation for the entire economy is

$$Y_t = I_t + C_t \quad \dots (4)$$

Now, when national income changes, investment and consumption also change. The change in investment depends upon previous year's investment (I_{t-1}) and so does consumption on previous year's consumption (C_{t-1}). So the increase in investment in period t , is $\Delta I_t = I_t - I_{t-1}$, and increase in consumption is $\Delta C_t = C_t - C_{t-1}$. As a matter of fact, the increase in the two sectors is related to the linking up of productive capacity of investment and the output-capital ratio. First, the *investment growth path* is determined by the productive capacity of investment in the capital goods sector ($\lambda_k I_k$) and its output-capital ratio (β_k). So that

$$\begin{aligned} I_t - I_{t-1} &= \lambda_k \beta_k I_{t-1} \\ I_t &= I_{t-1} + \lambda_k \beta_k I_{t-1} \end{aligned}$$

or $I_t = (1 + \lambda_k \beta_k) I_{t-1} \dots (5)$

Putting different value for t ($t = 1, 2, 3, \dots$) the solutions of equation (5) are

$$\begin{aligned} I_1 &= (1 + \lambda_k \beta_k) I_0 \\ I_2 &= (1 + \lambda_k \beta_k) I_1 \\ &= (1 + \lambda_k \beta_k) (1 + \lambda_k \beta_k) I_0 \\ &= (1 + \lambda_k \beta_k)^2 I_0 \quad [\because I_1 = (1 + \lambda_k \beta_k) I_0] \end{aligned}$$

In the same manner by putting the value of t in equation (5), we get

$$\begin{aligned} I_t &= I_0 (1 + \lambda_k \beta_k)^t \\ I_t - I_0 &= I_0 (1 + \lambda_k \beta_k)^t - I_0 \end{aligned}$$

$$\text{or } I_t - I_0 = I_0 (1 + \lambda_k \beta_k)^t - I_0 \quad \dots (6)$$

Similarly, by putting the value of t ($t=1, 2, 3, \dots$) in the *consumption growth path* $\Delta C_t = C_t - C_{t-1} = \lambda_c \beta_c I_{t-1}$, we get

$$C_1 - C_0 = \lambda_c \beta_c I_0$$

$$C_2 - C_1 = \lambda_c \beta_c I_1$$

and finally

$$C_t - C_0 = \lambda_c \beta_c (I_0 + I_1 + I_2 + \dots + I_t)$$

By substituting the values of I_1, I_2, \dots, I_t in equation (6) and its related equations, the above equation can be solved as

$$C_t - C_0 = \lambda_c \beta_c [I_0 + (1 + \lambda_k \beta_k) I_0 + (1 + \lambda_k \beta_k)^2 I_0 + \dots + (1 + \lambda_k \beta_k)^t I_0]$$

$$= \lambda_c \beta_c I_0 [1 + (1 + \lambda_k \beta_k) + (1 + \lambda_k \beta_k)^2 + \dots + (1 + \lambda_k \beta_k)^t]$$

$$= \lambda_c \beta_c I_0 \left[\frac{(1 + \lambda_k \beta_k)^t - 1}{(1 + \lambda_k \beta_k) - 1} \right]$$

or $C_t - C_0 = \lambda_c \beta_c I_0 \left[\frac{(1 + \lambda_k \beta_k)^t - 1}{\lambda_k \beta_k} \right] \quad \dots (7)$

Now, the growth path of income for the whole economy on the basis of equation (4) is

$$\Delta Y_t = \Delta I_t + \Delta C_t$$

$$\text{or } Y_t - Y_0 = (I_t - I_0) + (C_t - C_0)$$

By substituting the values of equations (6) and (7) in the above equation, we get

$$Y_t - Y_0 = (I_0 [1 + \lambda_k \beta_k]^t - 1) + \lambda_c \beta_c I_0 \left[\frac{(1 + \lambda_k \beta_k)^t - 1}{\lambda_k \beta_k} \right]$$

$$= I_0 [(1 + \lambda_k \beta_k)^t - 1] \left[1 + \frac{\lambda_c \beta_c}{\lambda_k \beta_k} \right]$$

$$= I_0 [(1 + \lambda_k \beta_k)^t - 1] \left[\frac{\lambda_k \beta_k + \lambda_c \beta_c}{\lambda_k \beta_k} \right]$$

Supposing $I_0 = \alpha_0 Y_0$ and substituting it in the above equation, we have

$$Y_t - Y_0 = \alpha_0 Y_0 [(1 + \lambda_k \beta_k)^t - 1] \left[\frac{\lambda_k \beta_k + \lambda_c \beta_c}{\lambda_k \beta_k} \right]$$

or $Y_t - Y_0 = \alpha_0 Y_0 [(1 + \lambda_k \beta_k)^t - 1] \left[\frac{\lambda_k \beta_k + \lambda_c \beta_c}{\lambda_k \beta_k} \right] + Y_0$

or $Y_t = Y_0 \left[[1 + \alpha_0 \frac{\lambda_k \beta_k + \lambda_c \beta_c}{\lambda_k \beta_k}]^t - 1 \right] + Y_0 \quad \dots (8)$

*These are G.P. series, when they are solved, the result is the next equation. Its solution is not required.

Where Y_t = gross domestic national income in year t ;

α_0 = the rate of investment in the base year;

λ_k = the share of net investment used in the capital goods sector;

$\lambda_c = 1 - \lambda_k$ = the share of net investment going to the consumer goods sector;

β_k = incremental output-capital ratio in the capital goods sector;

β_c = incremental output-capital ratio in the consumer goods sector.

The interpretative value of this model is that total investment in the economy consists of two parts. one part λ_k is used to increase the production of capital goods, and the other part λ_c to increase the production of consumer goods. Thus, the total investment is $\lambda_k + \lambda_c = 1$. The ratio

$$\frac{\lambda_k \beta_k + \lambda_c \beta_c}{\lambda_k \beta_k}$$

of the equation is the over-all capital coefficient. Assuming β_k and β_c to be given, the growth rate of income will depend upon α_0 and λ_k . Further assuming α_0 (the rate of investment in the base year) to be constant, the growth rate of income depends upon the policy instrument λ_k .

Given that $\beta_c > \beta_k$, it implies that the larger the percentage investment in consumer goods industries, the larger will be the income generated. The expression $(1 + \lambda_k \beta_k)^t$ of the equation shows, however, that after a critical range of time, the larger the investment in capital goods industries, the larger will be the income generated. In the beginning, a high value of λ_k increases the magnitude $(1 + \lambda_k \beta_k)_t$, and lowers the over-all capital coefficient

$$\frac{\lambda_k \beta_k + \lambda_c \beta_c}{\lambda_k \beta_k}$$

But as time passes, a higher value of λ_k would lead to higher growth rate of income in the long run.

If $\beta_c = \beta_k$, then the reciprocal of the over-all capital coefficient

$$\frac{\lambda_k \beta_k}{\lambda_k \beta_k + \lambda_c \beta_c} = \lambda_k$$

= marginal rate of saving. This leads us to an important policy implication of the model that for a higher rate of investment (λ_k), the marginal rate of saving must also be higher. A higher rate of investment on capital goods in the short-run would make available a smaller volume

of output for consumption, but in the long-run, it would lead to a higher growth rate of consumption.

Relation of the Mahalanobis Two-Sector Model with the Domar Model

Mahalanobis derived his two-sector model from the Domar model. Therefore, both models have a close relation. First we present the Domar model in terms of the parameters of the Mahalanobis model.

The equilibrium equation for determining investment in the Domar model is

$$I = \alpha Y$$

where I is investment, α is the saving-income ratio and Y is the national income.

The growth of investment in period t is

$$\Delta I_t = \alpha \Delta Y_t \quad \dots (1)$$

By taking investment in the initial period $I_0 = \alpha_0 Y_0$ (2)

$$\text{Dividing (1) by (2), } \frac{\Delta I_t}{I_0} = \frac{\alpha}{\alpha_0} \cdot \frac{\Delta Y_t}{Y_0}$$

$$\text{or } \frac{\Delta Y_t}{Y_0} = \frac{\alpha_0}{\alpha} \cdot \frac{\Delta I_t}{I_0}$$

$$\text{or } \frac{Y_t - Y_0}{Y_0} = \frac{\alpha_0}{\alpha} \cdot \frac{I_t - I_0}{I_0}$$

$$[\because \Delta Y_t = Y_t - Y_0 \text{ and } \Delta I_t = I_t - I_0]$$

$$\text{or } \frac{Y_t - Y_0}{Y_0} = \frac{\alpha_0}{\alpha} \left[\frac{I_t}{I_0} - 1 \right] \quad 1$$

$$\text{or } \frac{Y_t - Y_0}{Y_0} = \frac{\alpha_0}{\alpha} [(1 + \alpha \beta)^t - 1]$$

$$\left[\because \frac{I_t}{I_0} = (1 + \alpha \beta)^t \text{ and } \beta \text{ is output-capital ratio} \right]$$

$$\text{or } Y_t - Y_0 = \frac{\alpha_0}{\alpha} Y_0 [(1 + \alpha \beta)^t - 1]$$

$$\text{or } Y_t = \frac{\alpha_0}{\alpha} Y_0 [(1 + \alpha \beta)^t - 1] + Y_0$$

$$\text{or } Y_t = Y_0 \left[1 + \frac{\alpha_0}{\alpha} \left\{ (1 + \alpha \beta)^t - 1 \right\} \right]$$

(3)

On the other hand, the final equation of the two-sector Mahalanobis model is

$$Y_t = Y_0 \left[1 + \alpha_0 \frac{\lambda_k \beta_k + \lambda_c \beta_c}{\lambda_k \beta_k} \left\{ (1 + \lambda_k \beta_k)^t - 1 \right\} \right] \quad \dots (4)$$

There are certain similarities between the two models. First, the last expressions of the two equations (3) and (4) are similar, i.e., $(1 + \beta)^t$ and $(1 + \lambda_k \beta_k)^t$, since Domar's $\alpha\beta$ is Mahalanobis's $\lambda_k \beta_k$. Second, both use the concept of time lag. Finally, the policy conclusions of both are the same, investment can be increased by raising the marginal saving rate.

Despite these similarities, there is some difference between the two models. The Domar model is a single-sector model, while the Mahalanobis model is a two-sector model. Mahalanobis divides the economy into the capital goods sector and the consumer goods sector. On the other hand, Domar treats the whole economy as one sector.

2. FOUR-SECTOR MODEL

The Mahalanobis model is not a growth model in the real sense, rather it is an allocation model. Being associated with the Planning Commission, Mahalanobis knew that the maximum funds available for net investment during the *Second Five Year Plan* would be approximately Rs 5,600 crores and the aim was to provide additional employment to 10-12 million people. To these, he added a 5 per cent per annum increase in national income during the Plan period. He further estimated one-third of the total investment in investment goods industries, leaving two-thirds for investment in the remaining three sectors of the economy. He put all this data in a simple simultaneous equation system given below and obtained the solution which became the basis of India's *Second Five Year Plan*.

The Mahalanobis model takes a four-sector economy consisting of:

- (a) the investment goods sector (k);
- (b) the factory produced consumer goods sector (C_1);
- (c) the small household produced (including agricultural products) consumer goods sector (C_2); and
- (d) services (health, education, etc.) producing sector (C_3).

These subscripts k , 1 , 2 , and 3 are used respectively in the model for the industries producing investment goods, consumer goods (factory and household), and services.

For each of these four sectors a set of three parameters is

β 's (beta), i.e., β_k , β_1 , β_2 , β_3 —the ratios of net income

investment or output-capital ratios.

θ 's (theta), i.e., $\theta_k, \theta_1, \theta_2, \theta_3$, — the net investment required per engaged person or capital-labour ratios.

λ 's (lambda), i.e. $\lambda_k, \lambda_1, \lambda_2, \lambda_3$, — the proportion of investment allocated to each sector or allocation ratios.

Further, A stands for the total amount of investment to be made for the plan-period of five years, E for the total increase in income and N for the total increase in employment over the plan-period.

Given these parametric ratios (β 's, θ 's and λ 's) and the total amount to be invested (A), an estimate of total income (E) and employment (N) generated in the different sectors of the economy during the plan-period can be had on the basis of the system of equations.

The equations of the model are:

$$E = E_k + E_1 + E_2 + E_3 \quad \dots \dots \dots (1)$$

$$N = n_k + n_1 + n_2 + n_3 \quad \dots \dots \dots (2)$$

$$A = \lambda_k A + \lambda_1 A + \lambda_2 A + \lambda_3 A \quad \dots \dots \dots (3)$$

Now the increase in employment (N) in each sector is

$$n_k = \lambda_k A / \theta_k \quad \text{or} \quad n_k \theta_k = \lambda_k A \quad \dots \dots \dots (4)$$

$$n_1 = \lambda_1 A / \theta_1 \quad \text{or} \quad n_1 \theta_1 = \lambda_1 A \quad \dots \dots \dots (5)$$

$$n_2 = \lambda_2 A / \theta_2 \quad \text{or} \quad n_2 \theta_2 = \lambda_2 A \quad \dots \dots \dots (6)$$

$$n_3 = \lambda_3 A / \theta_3 \quad \text{or} \quad n_3 \theta_3 = \lambda_3 A \quad \dots \dots \dots (7)$$

Substituting the values of $\lambda_k A, \lambda_1 A, \lambda_2 A$ and $\lambda_3 A$ in equation (3), the total investment equation becomes

$$A = n_k \theta_k + n_1 \theta_1 + n_2 \theta_2 + n_3 \theta_3.$$

Similarly, the increase in income (E) generated in each sector can be estimated as follows:

$$E_k = \lambda_k A \cdot \beta_k \quad \dots \dots \dots (8)$$

$$E_1 = \lambda_1 A \cdot \beta_1 \quad \dots \dots \dots (9)$$

$$E_2 = \lambda_2 A \cdot \beta_2 \quad \dots \dots \dots (10)$$

$$E_3 = \lambda_3 A \cdot \beta_3 \quad \dots \dots \dots (11)$$

Also, $E = n_k \theta_k \beta_k + n_1 \theta_1 \beta_1 + n_2 \theta_2 \beta_2 + n_3 \theta_3 \beta_3$ [since $\lambda_k A = n_k \theta_k$ and so on from equations 4, 5, 6, and 7]

$$= Y_0 [(1 + \eta)^5 - 1] \quad \dots \dots \dots (12)$$

In the Mahalanobis model the above equation is the final one where, η (eta) is a given 5 per cent annual growth rate of income, and Y_0 the initial income per year, the E is derived by applying η rate to Y_0 . In the system of equations given above, A , E and N are the boundary conditions. They are constants. But at the same time they are the target variables to be achieved during the plan-period. The β 's θ 's and λ 's are the instrument variables.

The β 's and θ 's are, however, the structural parameters, determined by technological conditions and assumed to remain constant

during the plan-period. The λ 's are the allocation parameters which are at the choice of the planner within certain limits.

In the Mahalanobis model, the allocation parameter (ratio) λ_k for the investment goods sector is given and the remaining ratios for the other three sectors ($\lambda_1, \lambda_2, \lambda_3$) are obtained as solutions of the set of simultaneous equations given above. For example, as Mahalanobis explains, "the rate of increase of income or the employment generated may be treated as variables to which desired value may be assigned. The model would then enable us, with the help of numerical estimates of the various parameters, to study how the allocation ratios λ 's that is, the proportions of total investment going into the different sectors should be chosen so that the desired aim can be realized."

Professor Mahalanobis gives the following numerical solution of his model where

A (total investment)	=Rs 5,600 crores
η (percentage increase in national income)	=5 per cent per annum
N (total employment to be created)	=110 lakhs (11 million)
λ_k proportion of investment in investment goods industries	= $\frac{1}{3}$ (or 0.33)
The sectoral values of λ 's, β 's and θ 's are taken as	

Sectors	λ	β	θ
Investment goods (I)	$\lambda_k=0.33$	$\beta_k=0.20$	$\theta_k=\text{Rs } 20,000$
Factory consumer goods (C_1)	$\lambda_1=0.17$	$\beta_1=0.35$	$\theta_1=\text{Rs } 8,750$
Small and household industries including agriculture (C_2)	$\lambda_2=0.21$	$\beta_2=1.25$	$\theta_2=\text{Rs } 2,500$
Services (C_3)	$\lambda_3=0.29$	$\beta_3=0.45$	$\theta_3=\text{Rs } 3,750$

On the basis of the given data, the amount of investment in sector k is

$$\lambda_k A = \frac{33}{100} \times 5,600 = 1,850 \text{ crores}; \text{ the increase in income as a result of this investment comes to } E_k = \lambda_k A \beta_k = 1850 \times \frac{2}{3} =$$

Rs 370 crores, while the increase in employment in sector k is of the order of $n_k = \lambda_k A / \theta_k = 1850 \times \frac{1}{20000} = 0.9$ million (9 lakhs).

Similarly the allocation of increase in income, employment and investment for the other sectors during the

years in rounded figures, as calculated with the help of simultaneous equations are:

Sectors	Investment (A) (Rs crores)	Increase in	
		Income (E) (Rs crores)	Employment (N) Million
k	1850	370	0.9
C_1	980	340	1.1
C_2	1180	1470	4.7
C_3	1600	720	3.3
Total	5610	2900	10.0

We can sum up the Mahalanobis model thus:

In a given time period, in order to achieve a certain growth rate for the economy, the total investable amount has been divided in such a way that it leads to the required growth rate. But since the required growth rate is to be reasonably high, it can be achieved by expanding sector k and thereby producing larger quantities of investment goods. However, investment in sector k is bound to generate increased purchasing power and hence demand for consumer goods which require comparatively less capital but employ more labour. In this way a balance is sought to be established between the investment goods sector and consumer goods sector.

A Critical Appraisal

The above solution of the Mahalanobis model and its practical application to India in the form of the Second Five Year Plan proves that it possesses great utility as an instrument of development planning. But it has its limitations and weaknesses.²

1. **Fails to Solve any Definite Welfare Function.** It is essentially an operational model. As already explained, it arrives at an optimal solution out of a multiplicity of solutions in relation to a preference or welfare function already prescribed. The numerical solution of the model, however, does not point towards any definite welfare function without which it is not possible to arrive at an optimum allocation of resources.

2. **Arbitrary Value of λ_k .** Mahalanobis assumes the value $\lambda_k = 1/3$, but

²Alak Ghosh, *New Horizons in Planning*, pp. 41-42; see also S. Tsuru, "Some Theoretical Doubts on the Plan-Frame", *Economic Weekly*, January 1957 Annual Number; and A. Mitra, 'A Note on the Mahalanobis Model', *Economic Weekly*, March 16, 1957; P.N. Mathur, 'A Note on Planning in India', *IEJ*, November 4, 1957.

he does not ascribe any cogent reason for this, and simply says that "it would not be possible to go beyond this value under present conditions." He could very well choose any other value or any value for any other allocation parameter with perhaps better results. The assumption of $\lambda = \frac{1}{3}$ is, therefore, somewhat arbitrary and may not help the planners in arriving at correct solutions for the optimum allocation of investments of the different sectors of the economy.

3. Technique not Applicable to Open Economy. Moreover, the use of λ technique suggests that investment is a single homogeneous fund which is utilised for a single type of investment goods. Since investment goods are of heterogeneous type, this requires the use of an investment matrix. The λ technique can be applied as long as constant relative prices are assumed. It cannot, therefore, be applied to a model of open economy where the system is not homogeneous.

4. Supply of Agricultural Produce not Infinitely Elastic. The Mahalanobis model is based on the supposition that the supply of agricultural produce is infinitely elastic. This is untenable for the supply of agricultural produce has failed to meet the increased demand for food and raw materials ever since the beginning of the Second Five Year Plan.

5. Supply of Labour also not Infinitely Elastic. It also assumes an infinitely elastic supply of labour which does not seem to be correct even though an underdeveloped country like India is faced with the serious problem of unemployment and underemployment. What is required for productive structure is *not simple* labour but skilled and trained labour and management.

6. Production Technique not Constant. Like Harrod, Mahalanobis assumes the techniques of production to be constant during the Plan period. In fact, technological change is bound to occur during the process of development. Thus his model does not seem to take us very far.

7. Arbitrary Values for Structural Parameters. The values assigned to the structural parameters (the β 's and θ 's) are also arbitrary. In fact, it is extremely difficult to have a correct estimate-values of β 's and θ 's in an underdeveloped country which completely lacks in sufficient reliable data. Moreover, the assumption of independence between capital-output ratios and capital-labour ratios is not realistic. These parameters may change in the process of development.

8. Silent over Investment in a Mixed Economy. Further, the Mahalanobis model fails to guide the planners in deciding the share of investments in the private and public sectors. It is silent with regard to this important problem of development planning in a democratic country with a mixed economy.

9. Ignores Factor Prices. Another important defect of this model is that Mahalanobis ignores the pattern of factor prices while fixing targets on the basis of his model.

10. Closed Model. This model is confined to a closed economy. Mahalanobis assumed "that there will be no imports or exports of investment goods." Thus he ignored the impact of foreign trade on the variables of the model and deprived it of the element of reality.

11. Neglects Demand Functions. The Mahalanobis model concentrates exclusively on the supply functions and neglects the demand functions altogether. This is an unrealistic assumption and makes the growth model incomplete. "Actually speaking, many important considerations connected with market forces, psychological environment, popular enthusiasm and the emergence of specific pressure points are unavoidably involved in the course of development planning in a backward economy. The Mahalanobis model quietly ignores these important problems for the sake of mathematical simplicity."

12. Failure to Link up Investment Decisions with the Rates of Saving Required. According to K.N. Raj, one of the weaknesses of the Mahalanobis model is its failure to link up investment decisions with the rates of saving required. The necessity of high marginal rates of saving is one of the main considerations in favour of capital-intensive techniques of production.

13. Failure to Explain the Problem of Choice of Techniques. Professor Raj further points out that from the theoretical angle, the Mahalanobis model fails to explain the problem of choice of techniques satisfactorily. He asks, if sector C is divided according to techniques of production, why should not sector K be similarly divided? Even in the manufacture of machine-tools there are more or less capital-intensive techniques. The case of labour-intensive techniques could have been perhaps stated more pointedly.³

Conclusion. Despite these practical and theoretical weaknesses, the Mahalanobis model was instrumental in putting the Indian economy on the right path to development planning with the Second Five Year Plan and paved the way for the subsequent bolder Plans.

³K.N. Raj, "Growth Models and Indian Planning", *IER*, February 1961, pp. 260-61.

Chapter 36

GROWTH MODELS IN INDIAN PLANNING

The five-year plans in India have been based on various growth models explicitly or implicitly. The First Five Year Plan was based on a simple application of the Harrod-Domar growth model, and the Second Plan on the four-sector Mahalanobis model, and the subsequent Plans on more sophisticated models. None of the plan models enjoyed the official status though they were sometimes used for fixing targets. It were, however, the models for the Fifth Plan and the Sixth Plan contained in the documents "Technical Note" of each plan which enjoyed the official sanction. We analyse below the main analytical features of the growth models used in Indian planning.

THE FIRST PLAN MODEL

The model for the First Five Year Plan set out in 1952 was based on a simple application of the Harrod-Domar growth model:

$$\Delta I = \frac{1}{\alpha} I_0$$

where I represents the annual rate of investment, σ the potential social productivity of investment, α the marginal propensity to save, and ΔI the increase in investment.

The model was not worked out explicitly but was implicit in the numerical figures of the prospective plan worked out in the First Five Year Plan document. The basic equations, as worked out by the economists later on, were

$$I_t = S_t \quad \dots(1)$$

$$S_t = \alpha Y_t - b \quad \dots(2)$$

$$Y_t = \alpha K_t \quad \dots(3)$$

$$I_t = K_t \quad \dots(4)$$

where I_t is investment in period t , S_t is the saving, Y_t is the income and K_t is the capital stock in the corresponding period. Unlike the Harrod-Domar Model in which $MPS=APS$, the relation between the two is shown by equation (2). Alpha (α) is the capital-output ratio. Given these relations the growth process is given by the equation:

$$K_t = (K_0 - b/\alpha) e^{\alpha t} + b/\alpha$$

where $\alpha\omega$ is the asymptotic relative rate of growth of the system.

Assumptions. The model is based on the following assumptions: (a) The marginal propensity to save is greater than the average propensity to save. (b) There is no difference between the marginal capital-output ratio and the average capital-output ratio. (c) The economy is closed. (d) The prices are stable.

In the model of the Plan, the rate of investment in 1950-51 was assumed to be five per cent of the national income; the value of capital-output ratio was taken as 3:1 and the value of α was assumed to be 20 per cent.

Given these assumptions, the rate of investment was projected to expand from five per cent in 1950-51 to seven per cent in 1955-56, to 11 per cent in 1960-61, and to 20 per cent of national income by 1967-68. Assuming the population growth rate of 1.25 per cent per annum, the model further demonstrated that "the proposed rates of marginal saving would cause no reduction in per capita consumption at any stage but would leave enough for a gradual rise in consumption standards." The arithmetical projections of the model, based on a time-lag of two years between the increase in investment and the increase in output, also showed that the national income could be doubled by 1971-72, the per capita income by 1977-78, and the average consumption standard by about 70 per cent as compared with 1950-51.

Though the targets of investment subsequently adopted in the Second Five Year Plan conformed broadly to the dimensions indicated in this model, yet it ignored many important problems of development planning. It did not take into consideration structural difficulties faced by an underdeveloped country in transforming savings into the desired investment channels. Again, the assumption of a constant marginal rate of saving ignored the problem of planning over time.

THE SECOND PLAN MODEL

The Second Five Year Plan was based on the *Mahalanobis Four-Sector Model*¹ discussed in detail in the previous chapter. This model divided the Indian economy into four sectors: the capital goods sector, the consumer goods sector, the small or household consumer goods producing sector including agriculture, and the services producing sector.

The basic strategy was "to increase investments in heavy industries and also expenditure on services, to increase purchasing power and

¹For its detailed discussion, see the previous chapter. The numerical solution of the Mahalanobis Model should be given here.

create fresh demand, and on the other hand, to increase the supply of consumer goods by increasing investment and production as much as possible in the small and household industries to meet the new demand....Planning would be thus essentially a feedback process of matching a continuously increasing (planned) demand by a continuously increasing (planned) production giving rise to a steadily expanding economy." The implications of the model were to create larger employment opportunities, build a strong capital base, and increase productive and technical capacity within the economy.

The growth model, as contained in the Second Five Year Plan, carried arithmetical projections up to the Fifth Five Year Plan (1975-76) based on the figures of the First Plan. It assumed a growth rate of population of 1.3 per cent per annum during 1961-70. As against the actual incremental capital-output ratio of 1.8:1 in the First Plan, the capital-output ratio (β) of 2.3:1 was assumed for the Second Plan, calculated on the basis of increase in national income of Rs 2,680 crores with an investment of Rs 6,200 crores. The model took the investment coefficient (α_0) at 7 per cent in 1955-56 which was expected to rise to 11 per cent in 1960-61. The marginal rate of saving of 0.20 was assumed. The increase in national income was estimated at 47 per cent by 1960-61 as against 25 per cent during the First Plan.

THE THIRD PLAN MODEL

The Third Plan was based almost on the same growth model as the Second Plan, but there was greater inter-industry consistency in its formulation. The Plan Model emphasized interdependence of agriculture and industry, of economic and social development, of national and regional development, and of the mobilisation of domestic and external resources. It also placed great stress on measures for scientific and technological advance and for raising the general level of productivity, as well as on policies relating to population, employment and social change. The capital goods sector was regarded as crucial for securing rapid economic development. For building a sound capital base and for self-reliant and self-sustained growth, special emphasis was placed on the production of more capital goods, especially machine-building and engineering industries. Further, the model pointed toward the creation of a solid base for expansion of exports so as to remove the dependence on foreign aid in the subsequent Plans.

The growth model of the Third Five Year Plan assumed a growth rate of population of 2 per cent per annum for the period 1961-71. The incremental capital-output ratio (β) was assumed to be 2.3:1, the same as for the Second Plan. The investment coefficient (α_0) was taken as

per cent in 1960-61, which was expected to rise to 14-15 per cent in 1965-66. The saving rate was assumed to increase from 8.5 per cent in 1960-61 to 11.5 per cent in 1965-66. The Planning Commission stated that "if all the programmes included in the Plan can be completed in time, national income (at 1960-61 prices) will go up by about 34 per cent. Net output of agriculture and allied sectors will go up by nearly 25 per cent; of mining and factory establishments by about 82 per cent and of other sectors by about 32 per cent." Commenting on the Third Plan model, Dr V.V. Bhatt observed that it "was formulated without much regard to the choice possibilities either over time or at a point of time. The project formulation and selection process as a result became somewhat arbitrary. The resulting imbalances and inefficiencies were further aggravated by deficiencies in the technique of planning and in the actual operation of policies which suffered from lack of coordination as well as meaningful operational link with development objectives."

THE FOURTH PLAN MODEL

A Consistency Model for India's Fourth Plan by Alan S. Manne, Ashok Rudra, and others² was built in 1965 to provide a framework for the setting of actual plan targets. With 1960 as the base year, and 1970 as the terminal year, it was a 30-sector consistency model based on the conventional Leontief inter-industry "open" system. As the authors pointed out, "This consistency model is of the "open" rather than "closed" type. In order to apply it, the first step is to project the principal components of gross domestic expenditure, and to translate these into final demands for individual commodities. The model's job is then to deduce an internally consistent set of sectoral output levels, imports, and investment requirements....By working on an open one, we are in effect assuming that government has sufficient fiscal power so that it is unconstrained by the feedback link that operates in a market economy from the production process back to the distribution of incomes, savings and the generation of domestic expenditures."

The sectoral scheme had been expressed sometimes in the triangular pattern of input dependence and sometimes in the block-angular structure of the transactions matrix. "The bulk of such transactions takes place within two virtually independent complexes: one based upon agriculture and the other upon mining, metals, machinery and forestry products. The first of these sectors is the predominant source of consumption goods. The second is the source of investment goods, and

²Alan S. Manne, A. Rudra, and others, "A Consistency Model for India's Fourth Plan", *Sankhya*, Vol. 27, Series B, 1965.

appears to be the strategic point for import substitution. A third and smaller complex produces items that may be described as 'universal intermediates'—fuel, power, transport, and chemicals—items that are consumed within virtually all sectors of the economy."

The production targets in physical units had been derived from 12 sectors of the model. They were iron ore, iron and steel, motor transport, cement, chemical fertilisers, crude oil, foodgrains, electricity, rubber, jute textiles, coal, railways. The output of crude oil and rubber had been set exogenously in the model. Investments connected with social overheads and imports had been treated partly exogenously and partly endogenously. Such macro-variables as aggregate household consumption, government consumption, and exports had been treated exogenously.

The model yielded the following lessons: (a) "the output of machinery and steel is primarily determined by the level of investment outlays, that of foodgrains and cotton textiles entirely by the outlay on domestic consumption and that of petroleum products and electricity depend upon both; (b) while the output levels of metal-based industries are sensitive to assumptions with respect to the imports substitution programme, those of other sectors are not; (c) the overall investment level is barely susceptible to the imports substitution programme."³

The model of the Fourth Five Year Plan by the Planning Commission drew arithmetical projections of the growth variables up to 1980-81. The long-term projections were based on the future assessment of population prospects, growth of agricultural production, mobilisation of internal savings, efficiency of investment, growth of exports and import substitution. Accordingly, it was assumed that the population would grow at the rate of 2.5 per cent per annum during the Fourth Plan, and thereafter, this rate would fall reaching 1.7 per cent a year by 1980-81.

The targets of income and investment were based on the assumption that there would be no significant increase in foreign debt beyond the Fifth Plan. It implied that internal savings after the Fifth Plan would be sufficient to finance investment and liabilities on foreign debt, and the economy would enjoy a foreign trade surplus equivalent to interest on foreign debt. The latter pre-supposed the growth in exports at the rate of 7 per cent per annum and in non-food imports at the rate of 5.5 per cent per year.

Aggregate consumption expenditure was projected to rise at a rate of 5.3 per cent per annum as compared to a 6 per cent growth rate of national income. Development public expenditure was projected to

³Ashok Rudra, 'Usefulness of Plan Models: An Assessment Based on Indian Experience,' in Ashok Mitra (ed.) *Economic Theory and Planning—Essays in Honour of A.K. Dasgupta* (OUP), 1974.

grow at the annual rate of 8·9 per cent, and non-development and defence expenditure at the rate of 4·5 per cent per year.

The agricultural output was estimated to increase at the rate of 5 per cent per annum, and the industrial production at the rate of 8·10 per cent per year.

To realise the postulated growth rate of 5·7 per cent per annum during the Plan, the average rate of saving was postulated to rise from 8·8 per cent in 1968-69 to 13·2 per cent in 1973-74, and the rate of investment from 11·2 per cent to 14·5 per cent over the same period. For the entire Plan period, the incremental capital-output ratio was assumed to be 2·0.

THE FIFTH PLAN MODEL

The Fifth Five Year Plan model was based on the document "Technical Note on the Approach to the Fifth Plan of India 1974-79" prepared by the Perspective Planning Division of the Indian Planning Commission. The model was built around the twin objectives of the removal of poverty and attainment of self-sufficiency by 1979. The following equation was used for the 66-sector input-output model of the Fifth Plan:

$$X_i^t = \sum_{j=1}^{66} a_{ij} X_j^t + C_i^t + G_i^t + I_i^t + E_i^t + ST_i^t - M_i^t \quad (i=1,2,3,\dots, 66 \text{ sectors})$$

where X_i^t represents total output at factor cost of sector i in period t ; a_{ij}^t , inputs of sector i per unit of sector j in period t ; C_i^t , private consumption of sector i in period t ; G_i^t , public consumption at factor cost of sector i in period t ; I_i^t , total investment goods produced by sector i in period t ; E_i^t , exports at factor cost of sector i in period t ; ST_i^t , change in stock of sector i in period t ; and M_i^t represents the imports of sector i in period t .

The model of the Plan had been worked out by taking into account the technological characteristics of the economy as reflected in the inter-industry relationships. This involved the use of an input-output matrix and an elaborate system of material balances. It was a macro-economic 66-sector input-output model with a consumption sub-model. The consumption proportion matrices were based on consumer expenditure data by commodities and size classes of the 25th Round (1970-71) of the National Sample Survey as well as the estimates of the private consumption expenditure on different groups of commodities and services thereafter.

The corresponding matrices for imports were constructed as part of

an extended input-output matrix, while exports were estimated exogenously. Import substitution had been envisaged for important sectors to the extent permitted by the production possibilities and capacity utilisation in the domestic economy. Public consumption had been estimated to grow on an average by 10 per cent per annum, whereas exports had been estimated to grow at a rate of 8.5 per cent per year. In the terminal year of the Plan, 1979, private consumption and imports had been estimated endogenously. The envisaged total investment outlay for the Fifth Plan had been appropriately phased out over the Plan period.

Accordingly, 91 per cent of the total investment was estimated to be financed from domestic sources. Of the aggregate investments, about 58 per cent was postulated in the public sector and 42 per cent in the private sector. Of the aggregate domestic savings, 27 per cent were estimated to be contributed by the public sector comprising government administration, departmental and non-departmental undertakings, and public financial institutions. The balance of 73 per cent was expected to come from the private sector comprising corporate enterprises, cooperatives and households. The average rate of domestic saving was projected to rise from 14.4 per cent in 1973-74 to 15.9 per cent in 1978-79. Public savings were projected to grow from 2.5 per cent of GNP in 1973-74 to 4.6 per cent in 1978-79, while private savings were estimated to decline from 11.9 per cent in 1973-74 to 11.3 per cent in 1978-79.

Based on these projections, the overall annual rate of growth had been estimated at 4.37 per cent as against 5.5 per cent postulated in both the Technical Note and the Draft Plan. The growth rate of output in the agricultural sector was estimated at 3.94 per cent per annum, of mining and manufacture 7.10 per cent, of electricity 10.12 per cent, of construction 5.90 per cent, of transport 4.79 per cent and of services 4.88 per cent. The share of agriculture in total gross value added was estimated to decline from 50.78 per cent in 1973-74 to 48.15 per cent in 1978-79, while the share of mining and manufacturing was estimated to increase from 15.78 to 17.49 per cent over the period. Some marginal increases were projected in such sectors as electricity, transport, construction and services.

For the purposes of formulation of investment projects and production programmes, the projected rates of growth were translated into physical targets. For items like coal, crude oil, iron ore, and cement which formed independent sectors in the input-output model, the targets had been worked out directly from the sectoral growth rates. In other cases, a detailed system of material balances and other planning exercises were employed.

THE SIXTH PLAN MODEL

The Indian Sixth Plan Model was based on the 'Technical Note of the Sixth Plan' prepared by the Perspective Planning Division of the Planning Commission. The macro structure of the model had been prepared on 89-sector classification of the input-output table. The basic technique of the model closely resembles that of the Fifth Plan.

The analytical model comprises an input-output model, a macro-economic model and a consumption sub-model. The 89-sector input-output model is of the static Leontief type. Algebraically, the model is as follows:

$$X_i = \sum_{j=1}^{89} a_{ij} X_j + C_i + G_i + I_i + E_i + ST_i - M_i - i$$

where X_i is the gross output of sector i ; sector i represents factor cost of the economy; a_{ij} shows input-output coefficients; C_i is the private consumption of sector i ; G_i is the public consumption of sector i ; I_i is the gross fixed investment of sector i , E_i is the export of sector i , ST_i represents changes in inventories of sector i , and M_i is the import of goods and non-factor services of sector i .

The Sixth Plan had been formulated against the background of a perspective covering a period of 15 years from 1980-81 to 1994-95. This development perspective visualised accelerated progress toward the removal of poverty, generation of gainful employment and technological and economic self-sufficiency.

To achieve these objectives, the model arrived at the growth rate of 5.2 per cent in the Sixth Plan and 5.5 per cent in the subsequent ten year period. For this purpose, it used a large number of social and economic indicators such as GDP at 1979-80 prices, consumption, saving, investment, employment, per capita income and consumption, number of people below the poverty line, life expectancy, etc.

In order to assess the influence of demand for goods and services and for employment, population projections were made. The growth rate of population was expected to decline in successive quinquennia as a result of the decline in birth rate. So the annual average growth rate of population was projected at 1.79 per cent during 1981-86, 1.66 during 1986-91 and 1.56 per cent during 1991-96.

The Plan model stipulated a significant redistribution of income and consumption so as to reduce the percentage of population below the poverty line to 30 in 1984-85 and to less than 10 by 1994-95. It also estimated a net increase in employment, measured in standard person

years, at the rate of 3.4 per cent per annum as against a labour force growth of 2.4 per cent per annum.

The development strategy of the Plan envisaged a change in the existing structure of demand in favour of investment and social consumption. Accordingly, the rate of capital formation had been projected to increase from 21.5 per cent of GNP for 1979-80 to 25 per cent in 1984-85. The economy was also expected to achieve a modest surplus in balance of payments by 1994-95. Public consumption had been projected to increase from 10.7 per cent of GNP in 1979-80 to 11.5 per cent in 1984-85.

"The rise in the share of domestic capital formation as well as that of public consumption, together with the projected improvement in export earnings, implies a decline in the share of private consumption in gross national expenditure." In spite of this decline, private consumption expenditure was expected to grow at an annual average rate of nearly 4.7 per cent during 1980-85.

This increase in the rate of capital formation signifies a restraint on consumption expenditure in order to increase domestic saving. The rate of saving had been projected to increase from 21 per cent of GNP in 1979-80 to 24.4 per cent in 1984-85. The projected growth in domestic saving was to be achieved through a rise in the ratio of saving to disposable income of both public and private sectors.

Based on the stipulated changes in the structure of demand discussed above, the output structure was worked out in order to avoid imbalances in the perspective period. Accordingly, the output of the agricultural sector was projected to grow at the annual rate of 5.2 per cent during 1979-80 to 1984-85; of mining and manufacturing at 7.76 per cent; of electricity, gas and water supply at 11.25 per cent; of transport 6.7 per cent; and of services 6.70 per cent over the period. "The varying rates of growth in different sectors reflected the changes in the rates of growth of total final and intermediate demand for the output of different sectors which were themselves influenced by factors like degree of import dependence, relative changes in the composition of final demand, inter-industry relationships, etc. The rates of growth projected for different sectors were also expected to bring about a structural change in the economy as reflected in the composition of GDP at factor cost over the prospective period." Accordingly, the share of infrastructure and social services was projected to increase from 45.28 per cent in 1979-80 to 45.88 per cent in 1984-85. On the other hand, the share of agriculture was projected to decline from 35.13 per cent in 1979-80 to 32.9 per cent in 1984-85.

THE SEVENTH PLAN MODEL

The macro and sectoral structures of the Seventh Plan have been basically formulated on the Sixth Plan model. The macro structure of the Plan has been prepared on the basis of the 89-sector classification of the input-output table which has been aggregated into 50 sectors. It assumes the rate of domestic savings at 23.3 per cent of GDP in 1984-85 which is expected to go up to 24.5 per cent in 1989-90 which implies a marginal savings rate of 28.4 per cent. The broad quantitative frame of the Plan is based on the assumption of the overall ICOR of 5. The rate of gross investment is projected to rise from 24.5 per cent of GDP in 1984-85 to 25.9 per cent in 1989-90.

Based on these projections, the sectoral growth rates of output have been estimated. The growth rate of agricultural output has been estimated at 4 per cent; of minerals and industrial goods at 8.3 per cent; of electricity, gas and water supply at 12 per cent; of transport at 8 per cent; and other services at 6.6 per cent. The sectoral composition of national income in terms of gross value added has also been estimated. Agriculture and related sectors are expected to contribute 33 per cent of GDP in the terminal year of the Seventh Plan. The shares of mining, manufacturing, construction, electricity and transport are expected to be 34.4 per cent. Thus by the end of the Plan, the contributions of the agricultural sector, the industrial sector and the services sector are, in terms of income generated, projected to be roughly about one third each.

PART FOUR

DOMESTIC MEASURES FOR ECONOMIC DEVELOPMENT

Chapter 37

CAPITAL FORMATION AND ECONOMIC DEVELOPMENT

MEANING OF CAPITAL FORMATION

Almost all economists lay emphasis on capital formation as the major determinant of economic growth. "The meaning of 'capital formation' is that society does not apply the whole of its current productive activity to the needs and desires of immediate consumption, but directs a part of it to the making of capital goods, tools and instruments, machines and transport facilities, plant and equipment—all the various forms of real capital that can so greatly increase the efficacy of productive effort.... The essence of the process then, is the diversion of a part of society's currently available resources to the purpose of increasing the stock of capital goods so as to make possible an expansion of consumable output in the future."¹ Nurkse's definition relates only to the accumulation of material capital and neglects human capital. A proper definition must include both material and human capital. According to Singer, capital formation consists of both *tangible* goods like plants, tools and machinery and *intangible* goods like high standards of education, health, scientific tradition and research. The same view has been expressed by Kuznets in these words: "Domestic capital formation would include not only additions to constructions, equipment and inventories within the country, but also other expenditure, except those necessary to sustain output at existing levels. It would include outlays on education, recreation and material luxuries that contribute to the greater health and productivity of individuals and all expenditures by society that serve to raise the morale of employed population." Thus the term capital formation covers, material as well as human capital.

Importance of Capital Formation

Capital formation (or accumulation) is regarded as one of the

¹R. Nurkse, *op. cit.*, p. 2.

important and principal factors in economic development. According to Nurkse, the vicious circles of poverty in underdeveloped countries can be broken through capital formation. Due to low levels of income in such countries, demand, production and investment are deficient. This results in the deficiency of capital goods which can be removed by capital formation. The supplies of machines, equipment and tools increase. The scale of production expands. Social and economic overheads are created. It is capital formation that leads to the fuller utilisation of available resources. Thus capital formation leads to increase in the size of national output, income and employment thereby solving the problems of inflation and balance of payments, and making the economy free from the burden of foreign debts. We discuss below the importance of capital formation in detail.

The main purpose of economic development is to build capital equipment on a sufficient scale to increase productivity in agriculture, mining, plantations and industry. Capital is also required to construct schools, hospitals, roads, railways, etc. In fine, the essence of economic development is the creation of economic and social overhead capital. This is possible only if there is a rapid rate of capital formation in the country, that is, if a smaller proportion of the community's current income or output is devoted to consumption and the rest is saved and invested in capital equipment. As aptly pointed out by Lewis, the central problem in the theory of economic development is the process of raising domestic saving and investment from 4-5 per cent to 12-15 per cent of national income.

Investment in capital equipment not only increases production but also employment opportunities. Capital formation leads to technical progress which helps realise the economies of large-scale production and increases specialisation. It provides machines, tools and equipment for the growing labour force. Thus capital formation also benefits labour.

Capital formation leads to the expansion of market. It is capital formation which helps remove market imperfections by the creation of economic and social overhead capital, and thus breaks the vicious circles of poverty both from the demand side and the supply side.

Further, capital formation makes development possible even with increasing population. In overpopulated underdeveloped countries the increase in per capita output is related to the increase in capital-labour ratio. But countries aiming at raising the capital-labour ratio have to face two problems. *First*, the capital-labour ratio falls with increase in population so that large net investment is needed to overcome the diminution of capital-labour ratio. *Second*, when population is increasing rapidly, it becomes difficult to have sufficient savings for the

required quantity of investment, reason being that a low per capita income keeps the propensity to save at a low level in such a country. The only solution to these problems is a rapid rate of capital formation.

Underdeveloped countries are faced with the problem of balance of payments because they mostly export primary products like raw-materials and agricultural products, and import almost all types of manufactured, semi-manufactured and capital goods. Domestic capital formation is one of the important solutions to this problem of adverse balance of payments. By establishing import-substitution industries, the imports of manufactured and semi-manufactured goods are reduced. On the other hand, with the increasing production of all types of consumer and capital goods the composition of exports changes. Along with agricultural products and industrial raw materials, the exports of manufactured articles also start. Thus capital formation helps in solving the problems of balance of payments.

A rapid rate of capital formation gradually dispenses with the need for foreign aid. In fact, capital formation helps in making a country self-sufficient and reduces the burden of foreign debt. When a country borrows from foreign countries for long periods, it imposes a heavy burden on the future generations. With every loan the debt charges increase day by day which can only be repaid by levying more or/and higher taxes. The burden of taxes increases and money flows out of the country in the form of debt repayments. Therefore, it is capital formation that brings freedom from foreign aid, reduces the burden of foreign debt and makes the country self-sufficient.

The strains of inflationary pressure on a developing economy can be removed to a considerable extent by increased capital formation. The output of agricultural products and manufactured consumer goods tends to increase with a rise in the rate of capital formation. On the other hand, when income increases with capital formation, it raises the demand for goods. In the short run, it is not possible to match this increased demand by increase in supply and this results in the development of inflationary pressure in the economy. It is, however, a steady rise in the rate of capital formation in the long-run that augments the supply of goods, controls inflation and brings stability in the economy.

Capital formation also influences the economic welfare of a country. It helps in meeting all the requirements of an increasing population in a developing economy. When capital formation leads to the proper exploitation of natural resources and the establishment of different types of industries, levels of income increase and the varied wants of the people are satisfied. They consume a variety of commodities, their standard of living rises and their economic welfare increases.

Lastly, an increase in the rate of capital formation raises the level of national income. The process of capital formation helps in raising national output which in turn raises the rate and level of national income. Thus the rise in the rate and the level of national income depends on the increase in the rate of capital formation. Thus capital formation is the principal solution to the complex problems of underdeveloped countries, and is the main key to economic development.

Reasons for Low Rate of Capital Formation

The rate of capital formation is low in LDCs. The reason is that they lack in those factors which determine capital formation. In fact, capital formation depends upon savings, on the institutions mobilising these savings and on the investment of these savings. The failure of these three stages of capital formation to operate properly is responsible for the low rate of capital formation in such countries. The rate of capital formation in LDCs is about 5 per cent, whereas in America it is 15 per cent and in West Germany and Australia about 25 per cent. The main reasons for low rate of capital formation in LDCs are the following:

Low Income. Large savings are essential for capital formation. And savings depend upon the size of income. Since agriculture, industry and other sectors are backward in underdeveloped countries, the national output is low and so is the national income. As a result, per capita income is also low. On the other hand, the propensity to consume is very high, it is near unity. So almost the entire income is spent on consumption. Thus saving is not possible and the rate of capital formation remains low.

Low Productivity. Since the level of productivity is very low in such countries, the rates of growth of national income, saving and capital formation are also low. Their natural resources are either unutilised or misutilised due to the lack of efficient labour and technological knowledge, non-availability of capital, etc. These factors stand in the way of increasing the incomes of the resource-owners so that they are unable to save and invest more and the rate of capital formation does not rise.

Demographic Reasons. LCDs possess such demographic features which keep the rate of capital formation at a low level. The growth rate of population is very high. On the other hand, the per capita income is low. As a result, the entire income is spent on bringing up the additional numbers, and little is saved for capital formation. Besides, the rapid increase in numbers aggravates the shortage of capital because large investments are required to equip the growing labour force even with obsolete equipment. Moreover, in such economies a large percentage of

children in the total population entails a heavy burden on the parents in bringing them up and they are unable to save for capital formation. Lastly, such countries have a shorter life expectancy which means a smaller fraction of their population is available as an effective labour force. Since workers die in the prime of their lives, there are few adults to provide for large number of children. This brings down the per capita income further. Thus demographic reasons inhibit the rate of capital formation.

Lack of Enterprise. The lack of entrepreneurial ability is another factor responsible for low rate of capital formation in LDCs. In fact, entrepreneurship is regarded as the focal point in the process of economic development. But in LDCs the small size of market, deficiency of capital, lack of private property and contract, etc., retard enterprise and initiative, thus there is low rate of capital formation.

Lack of Economic Overhead. The existence of economic overheads is essential to make fruitful investment and to encourage enterprise, for capital formation depends on them to a considerable extent. But economic overheads like power, transport, communications, water, etc., are lacking in LDCs which retard enterprise, investment activities and the path of capital formation.

Lack of Capital Equipment. In such countries the rate of capital formation also remains low due to the lack of capital equipment. Here, not only the capital stock is low, but even capital is deficient. The total capital investments are hardly 5 to 6 per cent of the national income in LDCs whereas it is 15 to 20 per cent in developed countries. Due to the shortage of capital, it is not possible to replace the existing capital equipment and even to cover its depreciation in such countries. As a result, the rate of capital formation remains at a low level.

Inequalities in Income Distribution. There are extreme inequalities in income distribution which keep the rate of capital formation low in such countries. But income inequalities do not imply larger savings. In fact, larger savings are possible only in the case of the top 3 to 5 per cent of the people in the income-pyramid. But these people invest in unproductive channels like gold, ornaments, precious stones, real estates, foreign currency, etc. This distorts real investment and the rate of capital formation is low.

Small Size of the Market. The small size of the market is another reason for the low rate of capital formation in LDCs. It is a big hindrance in the way of enterprise and initiative. People are poor in such countries. The demand for goods is limited due to their low incomes. Hence it is the small size of the domestic market to absorb the supply of new products. This keeps the rate of capital formation at a low level.

Lack of Financial Institutions. Another reason for the low rate of capital formation in such countries is the lack of financial institutions to procure funds for investment. Larger capital expenditures are required for productive purposes. But this is not possible because of the lack of properly developed capital and stock markets, and credit and banking institutions. As a result, sufficient savings cannot be mobilised for investment purposes and the rate of capital formation remains low.

Economic Backwardness. Economic backwardness is also responsible for the low rate of capital formation in LDCs. Low labour efficiency, factor immobility, limited specialisation in occupation and in trade, economic ignorance, traditional values and social structure retard saving and investment, and prevent the rate of capital formation from increasing.

Technological Backwardness. Technological backwardness also stands in the way of capital formation. Obsolete techniques of production are used in such countries. As a result, per unit labour productivity and per unit capital productivity remain low. This situation keeps the national output and income low, and the rate of capital formation fails to rise.

Deficit Financing. One of the important sources of capital formation in such countries is deficit financing. But if it crosses the limits of safety then it tends to lower the rate of capital formation. It happens when deficit financing leads to an inflationary situation in the country. When prices rise, goods become dearer. As a result, consumers are required to spend a larger portion of their incomes on buying goods, and it becomes difficult to save. This retards capital formation.

Increase in Taxes. Taxes also retard and reduce capital formation. When governments increase the number and rates of taxes as a means of forced savings, the incomes of consumers are reduced. This may be due to both direct and indirect taxes. Direct taxes reduce income directly while indirect taxes reduce income by raising their prices. Thus savings and capital formation are retarded.

Demonstration Effect. According to Nurkse, one of the important reasons for low rate of capital formation in LDCs is the demonstration effect. Everybody has an urge to imitate the standard of living of his prosperous neighbours. Similarly, there is a tendency on the part of the people of such countries to emulate the higher consumption standards of advanced countries. This demonstration effect is usually caused by foreign films, magazines and visits abroad. As a result, the rise in incomes is spent on increased expenditure on conspicuous consumption and thus savings are almost static or negligible. Thus the rate of capital formation fails to rise.

Sources of Savings

The rate of voluntary private savings is extremely low in LDCs because of the low level of incomes and a high propensity to consume. Even dissaving is common among low income households in India, Ceylon and Thailand as well as among working families in Bombay, British Honduras and the Philippines.² However, there are some groups which receive very high incomes. They are the merchants, the landlords and the speculators. The savings of these upper income groups are seldom channelled into investment projects. Instead, they are utilised for speculative purposes and for hoarding in the form of gold and jewellery and for giving short-term loans at as high as 30 to 100 per cent interest rates per annum. They are spent in ways most likely to enhance prestige, i.e., on conspicuous consumption, on traditional items, on palatial buildings fitted with luxury gadgets in western style and on luxury automobiles.

Besides the few rich, there are the limitless cultivators. Given the same income, they save more than the labourers working in urban areas 'Peasants learn to be thrifty because they know how near they live to the brink of disaster.' Similarly, the money-lenders save more because their incomes are very high as compared to their consumption level. Rural savings also arise in some of the underdeveloped countries from urban remittances or from overseas remittances. People belonging to rural areas but working in towns, in the armed forces or living in foreign countries remit large sums to their dependents.

The wage and salary earning classes, better known as the middle class, are also a source of savings. But they save little because their inclination is more towards spending rather than saving since their incomes are very low. Whatever little they save is spent on conspicuous consumption, to educate their children, to build a house or to meet unforeseen circumstances, etc. "However, the very fact that these savings are merely a postponement of future consumption, and are thus largely offset by other postponed consumption means that they are not important in the context of productive investment."³

Another important source is the business and corporate savings in the form of distributed and undistributed profits. The profit-making classes, having an ambition for power, save more and thus invest more in productive enterprises. They are an important source of capital formation in the agricultural and industrial sectors. But they lack confidence in the security of long-term investments due to socialist leanings of the majority of underdeveloped countries. In fact the

²UN, *World Economic Survey*, 1966, pp. 29-30

³Lewis, *op. cit.*

Lack of Financial Institutions. Another reason for the low rate of capital formation in such countries is the lack of financial institutions to procure funds for investment. Larger capital expenditures are required for productive purposes. But this is not possible because of the lack of properly developed capital and stock markets, and credit and banking institutions. As a result, sufficient savings cannot be mobilised for investment purposes and the rate of capital formation remains low.

Economic Backwardness. Economic backwardness is also responsible for the low rate of capital formation in LDCs. Low labour efficiency, factor immobility, limited specialisation in occupation and in trade, economic ignorance, traditional values and social structure retard saving and investment, and prevent the rate of capital formation from increasing.

Technological Backwardness. Technological backwardness also stands in the way of capital formation. Obsolete techniques of production are used in such countries. As a result, per unit labour productivity and per unit capital productivity remain low. This situation keeps the national output and income low, and the rate of capital formation fails to rise.

Deficit Financing. One of the important sources of capital formation in such countries is deficit financing. But if it crosses the limits of safety then it tends to lower the rate of capital formation. It happens when deficit financing leads to an inflationary situation in the country. When prices rise, goods become dearer. As a result, consumers are required to spend a larger portion of their incomes on buying goods, and it becomes difficult to save. This retards capital formation.

Increase in Taxes. Taxes also retard and reduce capital formation. When governments increase the number and rates of taxes as a means of forced savings, the incomes of consumers are reduced. This may be due to both direct and indirect taxes. Direct taxes reduce income directly while indirect taxes reduce income by raising their prices. Thus savings and capital formation are retarded.

Demonstration Effect. According to Nurkse, one of the important reasons for low rate of capital formation in LDCs is the demonstration effect. Everybody has an urge to imitate the standard of living of his prosperous neighbours. Similarly, there is a tendency on the part of the people of such countries to emulate the higher consumption standards of advanced countries. This demonstration effect is usually caused by foreign films, magazines and visits abroad. As a result, the rise in incomes is spent on increased expenditure on conspicuous consumption and thus savings are almost static or negligible. Thus the rate of capital formation fails to rise.

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²UN, *World Economic Survey*, 1966, pp 29-30

³Lewis, *op cit.*

problem of mobilizing domestic private savings is twofold: *firstly*, it is one of increasing business savings, and facilitating their most effective use; *secondly*, it is to stimulate individuals to save more and make their savings available for the financing of appropriate growth promoting investment. On the whole, however, the expansion of private saving has been sufficient except in a few developing countries. But if national saving rates are to increase, it is from the private sector that the resources ultimately have to come.⁴

Last but not the least is the role of the government as a saver. "One of the inexorable features of economic growth seems to be a rise in the share of the government in the national income. At the lowest levels of national income per head the share of the government in *underdeveloped countries* may be as little as 5 per cent whereas advanced industrial governments use up to 10 per cent or so of real resources for current purposes, apart from what they use for military purposes and for transfers (pensions, insurance payments, interest payments, etc.)"⁵ So the capacity of the government to save in an LDC is limited due to the low level of income and large administrative expenses.

Sources of Capital Formation

The process of capital formation involves three steps: (*i*) increase in the volume of real savings, (*ii*) mobilisation of savings through financial and credit institutions, and (*iii*) investment of savings. Thus the problem of capital formation in underdeveloped countries becomes two-fold; *one*, how to increase the propensity to save of the people in the lower income groups, and *two*, how to utilise current savings for capital formation. This leads us to the sources of capital formation which are classified as domestic and external. The domestic sources from which savings can be mobilised for capital formation are: increase in national income, reduction in consumption, savings drives, establishment of financial institutions, mobilisation of gold hoards, perpetuation of income inequalities, increasing profits, fiscal and monetary measures, by utilising disguised unemployed, etc. The external sources are: foreign capital, restriction of consumption-imports and favourable terms of trade. We discuss these internal and external sources of capital formation below:

(1) **Domestic Sources.** The various domestic sources of capital formation are as follows:

(*i*) *Increase in National Income.* The first important step is to increase the national output or income which will tend to raise the

⁴World Economic Survey, *op. cit.*, p. 26.

⁵W.A. Lewis, *op. cit.*, p. 239. Italics mine.

income of the people. This can be done by utilising the existing techniques and employing resources more efficiently, by utilising unused resources productively, and by increased division of labour.

(ii) *Savings Drives.* Savings drives will also help solve the problem of augmenting savings. They require concerted efforts in the form of propaganda and social education. Savings is a matter of habit which can be inculcated by propaganda. People can be persuaded to save in their own interest or in the interest of the family, for imparting education to their children, for marrying them, for building a house or as a safeguard against old age, sickness or emergency. Similarly, issuing of savings certificates in the form of government bonds and annuities carrying a high rate of interest may be helpful in mobilizing savings. Further incentive to savings can be in the form of business gifts, lottery prizes and tax exemptions on the purchase of government bonds.

(iii) *Establishment of Financial Institutions.* It is common knowledge that much of the unspent current income is hoarded in cash, jewels, gold, etc., by the people in underdeveloped countries. Therefore, the need is to establish financial institutions where small savers can safely deposit their money with confidence. The setting up of a well-developed capital and money market by the central bank can give further impetus in this direction. In order to stimulate small savings among the masses, attention should be paid to the starting of life insurance, compulsory provident fund, provident fund-cum-pension-cum life insurance schemes, opening up of savings banks and mobile banks in rural areas, and promoting savings through cooperative societies, including the establishment of service cooperatives and strong apex institutions like the central and state cooperative banks. "Such agencies will not only permit small amounts of saving to be handled and invested conveniently but will allow the owners of savings to retain liquidity individually and finance long-term investment collectively."⁶

(iv) *Rural Savings.* Another important measure is to encourage rural savings for local needs which are understood and approved of by the savers. Government securities might be attached to particular development projects in rural areas. As the All India Rural Credit Survey Committee proposed, "These rural debentures should as far as possible be for specific projects of development in which the villager is interested in different degrees, according as they are of direct benefit to him, or those with whom he shares fellowship of interest because of his belonging to his district or region or state."⁷ The guiding policy therefore, be to link rural savings with local development projects.⁸

⁶E. Nevin, *Capital Funds in Underdeveloped Countries*, p. 75.

⁷All India Rural Credit Survey (abridged) ed., p. 267.

this way, mobilization of rural savings might lead to more rapid development. Such voluntary savings can even lead to that "critical minimum" which is so essential for a "take-off."

(v) *Gold Hoards.* Another method is the mobilization of gold hoards. This is a useful, though a neglected method of capital formation. The government should issue gold certificates carrying a high rate of interest in lieu of the gold surrendered by the public. But people are not prepared to part with gold and jewellery and are thus reluctant to invest in gold bonds or certificates voluntarily. It is, therefore, essential that hoarding of gold above a stipulated quantity should be prohibited by law; private trading in gold should be regulated; and the use of pure gold for manufacturing ornaments should be banned in the country. Along with these measures, smuggling of gold into the country should be stopped. These measures are not likely to be successful unless gold is sold in the country at the international price.

(vi) *Perpetuation of Income Inequalities.* This is also regarded as one of the measures to achieve high rates of saving and investment. Since the mass of the people have a low marginal propensity to save in underdeveloped countries, it is the higher income groups with a high marginal propensity to save that can do saving and investment for capital formation. This had been one of the major sources of capital formation in 18th century England and early 20th century Japan. But widening of income inequalities is not feasible under the prevailing political climate in underdeveloped countries. Moreover, it is not definite that the wealthy classes may utilise their savings for productive investments, as was done by the British entrepreneurs of the 18th century. Rather the tendency is to spend on conspicuous consumption re-inforced by the international demonstration effect. In some of the African and Latin American countries where the governments are not watchful, the declining influence of the wealthy classes has led to the flight of domestic capital into the safe vaults of banks in developed countries.

(vii) *Increasing Profits.* Professor Lewis⁸ is of the view that the ratio of savings to national income is a function not just of inequality, but precisely, of the ratio of profits to national income. He maintains that voluntary savings form a significantly large share of national income only where inequality of income distribution is such that profits are a relatively large share of national income. If there is unequal distribution of income and the society's upper level incomes accrue to the landlords or traders, there is little chance of providing voluntary savings to finance investments. Lewis believes that even if profits, interest and rental

⁸W.A. Lewis, *op. cit.*, pp. 227-229.

incomes as a whole are a small share of national income in an underdeveloped country, savings can be increased from 5 to 12 per cent by raising the profit rate. The share of profits in the national income can be increased by expanding the capitalist sector of the economy. In the first place, some legal safeguards should be provided to private investors against arbitrary depredations. Secondly, the technique of borrowing by private enterprise should be changed in order to minimize the risk of capital loss. Industrial banks and other specialized institutions like the government sponsored finance and development corporations and investment trusts should be set up. Thirdly, the capitalist sector is likely to expand rapidly if investment opportunities are very profitable. In the initial stages of development, a rise in productivity goes into profits. Productivity increases due to an unlimited supply of labour at low wages, technological progress, expansion of the market, geographical discoveries and the expansion of social overheads. The more rapidly the opportunities for productive investments expand, the faster the profits grow, and the greater is the capital formation. Fourthly, this process is also accelerated by mild and intermittent doses of inflation. A mild dose of inflation increases profits relatively to other incomes. So when profits rise, there is increased investment which increases the rate of capital formation. But profits can grow even in the absence of inflation due to other institutional and technological changes mentioned above. Therefore, says Professor Lewis, "The correct explanation of why poor countries save so little is not because they are poor but because their capitalistic sectors are so small." They can increase their rate of capital formation by raising profits relatively to national income, possibly without inflation. To this end, Lewis suggests that those who live on earned incomes particularly on ground rents, should be taxed heavily and the proceeds given to capitalists who live on profits unless the former agree to change themselves into the latter like the Japanese landed aristocracy. Thus profits can be increased by giving subsidies, and tax rebates, by providing adequate supply of raw materials and capital equipment, by restricting imports of competitive products, by controlling wages and trade unions and by government purchases of the goods of the industries. These measures might, however, create vested interests and lead to mal-distribution of resources within the economy. Professor D.R. Gadgil believes that the raising of profits to increase savings for capital formation may lead to social unrest and may even fail to produce socially desirable investment since the profit making classes are not necessarily interested in the welfare of the masses.⁹

(viii) *Fiscal Measures.* Since sufficient voluntary savings are

⁹D R Gadgil, *Economic Policy and Development*, p. 181

forthcoming for capital formation in an underdeveloped economy, the government is in a better position to mobilize them through various fiscal and monetary measures. These measures may be in the form of a budgetary surplus through increase in taxation, reduction in government expenditure, expansion of the export sector, raising money by public loans and even by deficit financing. Besides, the government can increase savings by running public undertakings more efficiently so that they show larger profits. Above all, the government should evolve a growth-oriented long-term savings policy so that savings should increase automatically as development gains momentum. Let us discuss these measures briefly.

Taxation is one of the major and most effective instruments of fiscal policy for reducing private consumption and transferring resources to the government for productive investment. Taxation helps capital formation in two ways: (i) by transferring private resources to the state for utilisation in the desired channels; and (ii) by providing incentives to the private sector to increase production. The first point further raises two problems: how much taxation should be raised and how should it be allocated? According to Professor Lewis, an underdeveloped country should raise at least 20 per cent of its national income through taxation. Out of this, 12 per cent should be utilised on current expenditure and 8 per cent on capital investments in the public sector.

The second purpose of taxation (of providing incentives to private enterprise) involves the types of taxation and the rates to be levied. Progressive direct taxes on personal incomes, wealth, expenditure, etc. should be so levied that they do not adversely affect the incentives to work, save and invest. They should aim at reducing the tendency of the wealthy class to conspicuous consumption, capital flight, hoarding, and speculation. The decision about rates of taxes is, however, the most ticklish problem, for it cannot be said with definiteness which rate will encourage or discourage private enterprise.

Indirect taxes also provide incentives for development by reducing consumption and encouraging the masses to save more. Moreover, such taxes help in collecting funds which cannot be otherwise collected from the mass of the people. High rates on luxuries and low rates on articles of consumption are the most accepted principles of indirect taxes. Besides, import duties on luxury articles restrict their consumption and at the same time bring revenue to the state for productive investment. Taxation of export incomes and levying of export duties on agricultural and industrial raw materials are other fruitful sources of development finance.

Public borrowing is also a useful tool for diverting resources from unproductive to productive channels. But its scope is limited in

underdeveloped countries because of the low levels of income and savings, and high propensity to consume. Besides, there is the lack of organised money and capital markets. To make public borrowing a success, concerted campaign by propaganda and social education is essential. Further, a network of intermediate agencies should be set up in the form of savings banks, commercial banks, insurance companies, unit trusts, social security institutions and a well-organised bill market. Nurkse also suggests forced loans if voluntary public borrowing does not succeed.

(ix) *Inflation.* If sufficient funds are not forthcoming for capital formation, inflation is the most potent measure. It is regarded as a hidden or invisible tax. When prices rise, they reduce consumption and thus divert resources from current consumption to investment. The government creates inflation by issuing more currency into circulation to meet its requirements. But inflation raises savings at the cost of the standard of living of the masses. The fixed income groups are the most hard hit. Discontentment increases among the masses, unions fight for higher wages and productivity is adversely affected. Rising prices and costs also reduce exports to world markets. Thus inflation, as a method for capital formation, brings more harm than benefit unless counter-inflationary measures are adopted by the government.

(x) *Profits of Public Corporations.* The government can also mobilise domestic savings for productive investment by establishing public corporations. Public corporations receive funds in the form of equity capital and bonded debt from the open market, and in countries like India, directly from the government. They also obtain foreign loans or collaborate with foreign enterprises. Public corporations are a substitute for private enterprise in underdeveloped countries. They generally utilise their resources as a revolving fund. But in certain underdeveloped countries where public corporations are established as state enterprises, their profits are utilised for capital formation. This is being done in the case of public enterprises set up by the Central and State Governments in India. In many underdeveloped countries like India, Philippines, Columbia and Brazil, public corporations have been set up for financing the establishment and running of private enterprises. Similarly, they have been formed as investment trusts. The establishment of such varied public corporations helps organise capital and money markets for the mobilisation of domestic savings for capital formation.

(xi) *Utilisation of the Disguised Unemployment.* According to Nurkse, one of the important sources of capital formation is the concealed saving potential contained in rural underemployment in overpopulated underdeveloped countries. The disguised unemployed

workers contribute practically little or nothing to output, i.e., their marginal productivity is zero or negligible. Such unproductive workers can be removed from the land without a fall in agricultural output and employed on various capital projects such as irrigation, roads, house building, etc., and they can be a fruitful source of capital formation. The newly employed workers can be provided simple tools from the farms by the reorganisation of agriculture or by importing them from abroad or by getting the same made by the workers. It is, however, assumed that food will continue to be provided to the newly employed workers by their relative-workers on the farms without any transport costs and at the same time maintaining their own consumption level. In this way, mobilization of the disguised unemployed as saving potential becomes self-financing. Nurkse's view precludes the payment of wages to workers. If wages are paid to workers they will spend them on foodstuffs and thus raise the incomes of the agriculturists working on the farms. This increased income can be taxed to finance the investment projects. When the investment projects are completed, they will tend to raise output and income which can also be taxed and utilised for further investment.¹⁰

(2) **External Sources.** Domestic sources for capital formation are required to be supplemented by the following external sources:

(i) *Foreign Aid.* In the absence of adequate domestic resources for capital formation, it is necessary to import foreign capital in the form of loans and grants from advanced countries without any 'strings.' But the best course is to start joint ventures whereby foreign investors bring technical know-how along with capital, and they train local labour and enterprise. Capital can also be imported indirectly by paying for through exports. This is the best policy because exports pay for imports. But it is not possible for a backward economy to increase its exports to the level of capital imports in the initial stage of development.

(ii) *Restriction of Imports.* Another important external source of capital formation is the restriction of consumption imports. All luxury imports should be restricted and the foreign exchange so saved should be utilised in importing capital goods. This measure can be successful only if the domestic income saved on imported consumer goods is not utilised on luxury and semi-luxury goods manufactured at home. If consumers start spending more on domestic consumer goods, the increase in the import of capital goods will be offset by reduction in domestic investment because resources will be diverted from domestic capital production to increased spending on consumer goods. An increase in domestic saving is, therefore, essential if the restriction of

¹⁰These internal measures are discussed in greater detail in the subsequent chapters.

luxury imports is to lead to an increase in net capital formation.

(iii) *Favourable Terms of Trade.* Similarly, if the terms of trade move in favour of an underdeveloped country, it is in a position to import large quantities of capital goods. To take advantage of the favourable terms of trade, it is essential that the increase in domestic income due to larger export earnings should be saved and invested productively. If the extra income thus earned is spent on consumer goods, new saving will not take place for capital formation. Since improvement in the terms of trade is not an automatic source of capital formation, Nurkse suggests that this saving should be extracted through taxation 'to give the country a command over additional imports of investment goods.'

Conclusion. Capital formation is thus an important determinant of economic development. It would be, however, an over-simplification to regard economic development as a matter of capital formation alone, neglecting political, social, cultural, technological, and entrepreneurial factors.

Chapter 38

ROLE OF AGRICULTURE AND INDUSTRY IN ECONOMIC DEVELOPMENT

AGRICULTURE AND ECONOMIC DEVELOPMENT

The contribution of agriculture to economic development lies in: (i) providing more food to the rapidly expanding population; (ii) increasing the demand for industrial products and thus necessitating the expansion of the secondary and tertiary sectors; (iii) providing additional foreign exchange earnings for the import of capital goods for development through increased agricultural exports; (iv) increasing rural incomes to be mobilized by the state; (v) providing productive employment; and (vi) improving the welfare of the rural people. We discuss these one by one.

In LDCs, food production dominates the agricultural sector. When output expands with increased productivity, it increases the income of the farmers. Rise in per capita income leads to substantial rise in the demand for food. In such economies, the income elasticity of demand for food is very high. It usually ranges between 0.6 and 0.8 per cent. Moreover, the increase in the growth rate of population due to a rapid decline in the mortality rates and slow reduction in fertility rates tends to raise further the demand for food. Besides, the demand for food increases with the expansion of population in towns and industrial areas. Taking these factors into consideration, the increase in farm output should be at a higher rate than the rate of increase of food demand. In a situation where the increased production of agricultural commodities lags behind the growth in demand for them, there will be a substantial rise in food prices. To offset domestic shortage and prevent rise in prices, food may be imported from abroad but it can be at the cost of capital goods needed for development. The state may also introduce price controls, rationing and compulsory food collection. All this emphasizes the importance of increase in food production in LDCs.

A rise in rural purchasing power, as a result of the increased agricultural surplus, is a great stimulus to industrial development. The market for manufactured goods is very small in an underdeveloped country where peasants, farm labourers and their families, comprising typically two-thirds or four-fifths of the population, are too poor to buy

any factory goods in addition to whatever little they already buy. There is lack of real purchasing power reflecting the low productivity in agriculture.¹ The basic problem thus is low investment-returns caused by the small size of the market. Increased rural purchasing power caused by expansion of agricultural output and productivity will tend to raise the demand for manufactured goods and extend the size of the market. This will lead to the expansion of the industrial sector. Moreover, the demand for such inputs as fertilizers, better tools, implements, tractors, irrigational facilities in the agricultural sectors will lead to the greater expansion of the industrial sector. Besides, the means of transport and communications will expand when the agricultural surplus is to be transported to urban areas and manufactured goods to the rural areas. The long-run effect of the expansion of the secondary and tertiary sectors will be towards higher profits in them whether they are operated in the private or the public sector. These profits will tend to increase the rate of capital formation through their reinvestment. This is what Kuznets calls the "market contribution" of agriculture when it trades with others.

Underdeveloped countries mostly specialise in the production of a few agricultural goods for exports. As output and productivity of the exportable goods expand, their exports increase and result in larger foreign exchange earnings. Thus agricultural surplus leads to capital formation when capital goods are imported with this foreign exchange. As development gains momentum due to industrialization, the proportion of agricultural exports in country's total exports is likely to fall as they are needed in larger quantities for domestic production of imported articles. Such articles are import substitutes and conserve foreign exchange. Similarly, increased marketed surplus of foodgrains leads to a net saving of foreign exchange, as the economy tries to achieve the goal of self-sufficiency in food production. Larger production of food and export crops not only conserve and earn foreign exchange but also lead to the expansion of the other sectors of the economy. Foreign exchange earnings can be used to build the efficiency of other industries and help the establishment of new industries by importing scarce raw materials, machines, capital equipment and technical know-how. Kuznets calls it the "product contribution" of agriculture which first augments the growth of net output of the economy, and second, the growth of per capita output.

An underdeveloped country needs large amount of capital to finance the creation and expansion of the infrastructure and for the development of basic and heavy industries. In the early stages of development,

¹R. Nurkse, *Patterns of Trade and Development*

Agriculture also expands and diversifies employment opportunities in rural areas. As agricultural productivity and farm income increase, non-farm rural employment expands and diversifies. Landless and marginal farmers are primarily engaged in non-agricultural pursuits which include the manufacture of textiles, furniture, tools, handicrafts, leather and metal working; processing, marketing, transport, repair work; construction of houses and other buildings; education, medicine and other services. All these activities satisfy local demand.

Lastly, increase in rural incomes as a result of the agricultural surplus tends to improve rural welfare. Peasants start consuming more food especially of a higher nutritional value in the form of superior quality cereals, eggs, ghee, milk, fruits, etc. They build better houses fitted with modern amenities like electricity, furniture, radio, fan, etc. Provide themselves with bicycles, motor cycles, watches, readymade garments, shoes, etc. They also receive direct satisfaction from such services as schools, health centres, irrigation, banking, transport and communication facilities. Thus increased agricultural surplus has the effect of raising the standard of living of the mass of rural people.

ROLE OF INDUSTRIALISATION

Industrialisation is the process of manufacturing consumer goods and capital goods and of creating social overhead capital in order to provide goods and services to both individuals and businesses. As such industrialisation plays a major role in the economic development of LDCs.

Industrialisation is a pre-requisite for economic development as the history of advanced countries shows. For development, the share of the industrial sector should rise and that of the agricultural sector decline. This is only possible through a policy of deliberate industrialisation. As a result, the benefits of industrialisation will "trickle down" to the other sectors of the economy in the form of the development of agricultural and service sectors leading to the rise in employment, output and income.

In overpopulated LDCs there is overcrowding on the land, holdings are subdivided and fragmented, and farmers practise traditional agriculture. For rapid development, LDCs cannot afford to wait for changes in farm practices to take place. Therefore, LDCs must begin with industrial development to supply fertilisers, farm machinery and other inputs so as to increase efficiency on the farm.

Again, industrialisation is necessary in order to provide employment to the underemployed and unemployed in the agricultural sector. In overpopulated LDCs, large number of people are underemployed or

capital can be provided by increasing the marketable surplus from the rural sector without reducing the consumption levels of farm population. According to Johnston and Mellor, "An increase in agricultural productivity implies some combination of reduced inputs, reduced agricultural prices or increased farm receipts."² Labour as the principal input can be a source of capital formation when it is reduced on the farm and employed in construction works. But the possibility of utilising unskilled surplus farm-labour on capital projects requiring skilled labour is limited. The second possibility of increasing capital formation through reduced agricultural prices is also not feasible in the early stages of development when the rise in prices is inevitable. Reduction in agricultural prices is possible in the long-run but democratic countries may not be able to follow this policy for political reasons. A more practicable solution is to stabilise the prices of farm products. The third possibility of increasing farm receipts is perhaps the best way of capital formation. This can be done by mobilising increased farm incomes through agricultural taxation, land taxes, agricultural income tax, land registration charges, school fees, fee for providing agricultural technical services and other types of fees that cover all or part of the cost of services provided to the farm population. But "political and institutional problems make it difficult to translate the increased potential for saving and capital accumulation, made possible by increased agricultural productivity, into an actual increase in investment," in underdeveloped countries. According to Wald, special assessments have had their widest application in the United States. In view of the fact that they are specially designed for financing such development projects as irrigation works, flood control system and certain classes of roads, all of which are extremely important for underdeveloped countries.³ Except for betterment levy in a few states no other assessment exists in India. Earnings from land revenue are on the decline and agricultural income tax is not favoured due to political reasons. Wald, therefore, warns underdeveloped countries like India that "the penalties of too light taxation of agriculture are a stagnating farm sector, a financially starved public sector and a retarded rate of economic growth in the country as a whole." Thus in countries where agriculture dominates, the taxation of agriculture in one form or another is essential for mobilising agricultural surplus in order to accelerate economic development. Kuznets calls it the "factor contribution" of agriculture when there is a transfer of resources to other sectors, these resources being productive factors.

²B.F. Johnston and J.W. Mellor, 'The Role of Agriculture in Economic Development', *A.E.R.*, September, 1961.

³H.P. Wald, *op. cit.*

Agriculture also expands and diversifies employment opportunities in rural areas. As agricultural productivity and farm income increase, non-farm rural employment expands and diversifies. Landless and marginal farmers are primarily engaged in non-agricultural pursuits which include the manufacture of textiles, furniture, tools, handicrafts, leather and metal working; processing, marketing, transport, repair work; construction of houses and other buildings; education, medicine and other services. All these activities satisfy local demand.

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In overpopulated LDCs there is overcrowding on the land, holdings are subdivided and fragmented, and farmers practise traditional agriculture. For rapid development, LDCs cannot afford to wait for changes in farm practices to take place. Therefore, LDCs must begin with industrial development to supply fertilisers, farm machinery and other inputs so as to increase efficiency on the farm.

Again, industrialisation is necessary in order to provide employment to the underemployed and unemployed in the agricultural sector. In overpopulated LDCs, large number of people are underemployed or

disguised unemployed whose marginal product is zero or negligible. They can be transferred from agriculture to industry with little or no loss in agricultural output. Since the marginal product of labour is higher in industry than in agriculture, transferring such workers to the industrial sector will raise aggregate output. Thus overpopulated LDCs have no choice but to industrialise.

Industrialisation is also essential in LDCs because it brings increasing returns and economies of scale while agriculture does not. "These economies reside in training, stimulating communication, interaction within industry (inter-sectoral linkages), demonstration effects in production and consumption, and so on. Rural society tends to be stagnant, urban society dynamic. Since industrialisation brings urbanisation, it is superior to the stimulation of agriculture."

Further, the LDCs need industrialisation to free themselves from the adverse effects of fluctuations in the prices of primary products and deterioration in their terms of trade. Such countries mainly export primary products and import manufactured goods. The prices of primary products have been falling or remaining stable due to protectionist policies of advanced countries, while the prices of manufactures have been rising. This has led to deterioration in the terms of trade of the LDCs. For economic development, such countries must shake off their dependence on primary products. They should adopt import substituting and export-oriented industrialisation.

The case for industrialisation in the LDCs also rests on the psychological boost which such a policy provides to their citizens in marching towards modernisation. Industrialisation is viewed as a matter of pride by every LDC, for it implies using the new technology, new and diverse skills, larger enterprises and more large cities. Moreover, incomes rise rapidly in the industrial sector which are saved and invested for creating more demand for goods and services. Since industrialisation is followed by urbanisation, employment opportunities and incomes increase.

People enjoy the fruits of modernisation in the form of a variety of goods and services available in urban centres due to industrialisation. These also affect the rural sector through the demonstration effect. Thus industrialisation tends to raise the living standards and promotes social welfare.

Finally, industrialisation brings social transformation, social equality, more equitable distribution of income and balanced regional development in the process of economic development.

A Critical Appraisal. The policy of industrialisation followed by the LDCs in the early phase of their development has not brought the expected economic and social benefits. It has failed to reduce in-

equalities of income and wealth, unemployment, and regional imbalances. Even the pace of development has been uneven with the neglect of the growth of other sectors. Moreover, industrialisation has created such serious problems as: "(1) rural stagnation, (2) the mushrooming growth of the urban underclass, (3) education poorly geared to the development needs, (4) organisational "power failures" in government bureaucracies, and (5) excessively high rates of growth of the population and the labour force."⁴

Therefore, economists have veered round to the view that there is no basis for the argument that development should be launched with industrialisation. Rather, the process of development should be interwoven with the harmonious growth of agriculture and industry. In fact, in most LDCs successful industrialisation has been supported by sustained agricultural development.

Interrelationships between Agricultural and Industrial Development

Debates have centred around the relative importance to be assigned to agriculture versus industry. But this dichotomy is often overdrawn. Experience has shown the limitations of overemphasising industrialisation, and it is increasingly recognised that agricultural progress must have a vital role in the development process. The earlier confrontation of industrial development versus agriculture has been shown to be a false issue, and the concern now is rather with the interrelationships between industry and agriculture and the contribution that each can make to the other."

In the LDCs, more people are engaged in agriculture for their livelihood than in the industrial and other sectors of the economy. Agricultural growth provides food for the growing non-agricultural labour force and raw materials for agro-based industries, stimulates domestic demand for industrial goods, increases savings and tax revenue to be utilised for further development, earns more foreign exchange to finance imports of capital, intermediate goods and raw materials for industrialisation, and facilitates the development of labour-intensive village, small and medium industries in rural and urban areas.

Since agriculture provides employment to more than 70 per cent of the population in the early stages of development, increases in agricultural production and productivity raise rural incomes. Rising rural incomes have strong multiplier effects in that they increase the demand for domestic non-agricultural goods and services which, in turn, increase the incomes of those providing the goods and services.

⁴Clark Kerr, et al., "Postscript to Industrialisation and Industrial 1971.

As rural incomes rise due to increasing agricultural yields, the increase in the domestic demand for industrial goods brings rapid gains in industrialisation. Besides, increases in industrial output of consumer goods needed by the rural population, the output of fertilisers, pesticides, agricultural tools, implements, and other intermediate manufactured goods required by the farm sector also increases. Moreover, with the diversification of agricultural activities, a number of labour-intensive village and small enterprises are set up in the rural areas. These provide further fillip to industrialisation.

When there is agricultural progress, some of the resources for industrialisation come from agriculture. In fact, increased agricultural productivity implies a large marketable surplus and a redistribution of income in favour of the rural sector. Industrialisation requires the reallocation of funds towards the modern sector along with rising agricultural incomes. Rising farm incomes are mopped up through land taxes and betterment levies, and the mobilisation of rural savings through savings drives and such financial institutions as cooperative banks, rural banks, etc. They play an important part in channelising rural savings for industrialisation.

Increasing yields of agricultural products for exports help finance large imports of raw materials, intermediate and capital goods for industrial production. Similarly, by raising their food production, the LDCs save the foreign exchange for industrial development.

On the other side, industrialisation favourably affects agricultural development in a number of ways.

First, with industrialisation incomes rise rapidly which increase the demand for such agricultural commodities as milk, vegetables, eggs, poultry, etc. Since the production of such commodities is labour intensive, agricultural production is greatly increased without enlarging farm acreage. This, in turn, provides more work to the rural population and raises incomes.

Second, industrialisation increases the availability of capital for the agricultural sector which helps in modernising agriculture and raising farm output.

Third, industrialisation followed by urbanisation opens vast job opportunities to the rural people who remit money back to the home. This is, in turn, utilised for buying inputs for farming or raising cattle, poultry, fisheries, etc. With improved means of transportation due to industrialisation, markets expand which facilitate the sale of such agricultural products at remunerative prices in the towns. Moreover, rural people living in villages near the towns and cities who work in city

establishments also continue various part-time jobs at home which further raise their incomes.

Fourth, when urbanisation follows industrialisation, it provides larger facilities for education, travel and contact with new things and ideas which widen the horizon of the rural people, change their attitudes towards life and lead to modernisation.

Finally, industrialisation provides a wide and expanding range of consumer goods which encourages the agriculturists to increase farm produce. This, in turn, tends to raise their incomes to enable them to buy the consumer goods.

Thus both agricultural and industrial development are interrelated and each affects the growth of the other in ways mentioned above. The LDCs should, therefore, achieve the harmonious development of agriculture and industry for a steady growth of the economy.

Chapter 39

MONETARY POLICY IN ECONOMIC DEVELOPMENT

MEANING AND IMPORTANCE

Monetary policy refers to the policy of the monetary authority of a country with regard to monetary matters. It may be defined as that policy which deals with: (a) "the controls of financial institutions; (b) active purchases and sales of paper assets by the monetary authority as a deliberate attempt to effect changes in money conditions; and (c) passive purchases and sales of paper assets resulting from the maintenance of a particular interest rates structure, the stability of security prices, or meeting other obligations and commitments."¹ Monetary policy in an underdeveloped country plays an important role in accelerating development by influencing the cost and availability of credit, by controlling inflation, and by maintaining balance of payments equilibrium. As development gains momentum, an appropriate monetary policy is all the more essential to provide an elastic credit supply to meet the requirements of a growing volume of trade, a rapidly increasing population, and an expanding monetized sector.

Main Features of Monetary Policy

According to Dr J.D. Sethi, monetary policy can be taken to function in the following directions: (i) To have and also to make use of a most suitable interest rate structure. (ii) To achieve a correct balance between the demand for and supply of money. (iii) The provision of proper credit facilities for a growing economy and stopping its undue expansion; and also the channeling of credit to users as consistent with pre-planned investment. (iv) The creation, working and expansion of financial institutions. (v) Debt management.² These features of monetary policy in an underdeveloped country are discussed below:

1. **Creation and Expansion of Financial Institutions.** One of the aims of monetary policy in an underdeveloped country is to improve its currency and credit system. More banks and financial institutions should

¹J.D. Sethi, *Problems of Monetary Policy in an Underdeveloped Country*.

²Ibid., p. 94.

be set up to provide larger credit facilities and to divert voluntary savings into productive channels. Financial institutions are localised in big cities in underdeveloped countries and provide credit facilities to estates, plantations, big industrial and commercial houses. In order to remedy this, branch banking and unit banking should be extended to rural areas to make credit available to peasants, small businessmen and traders. For an effective monetary policy, however, the existence of a strong and powerful central bank is a necessary condition. In underdeveloped countries, the commercial banks provide only short-term loans. Credit facilities in rural areas are mostly non-existent. The only source is the village money-lender who charges exorbitant interest rates. Besides, there are no properly organised and developed stocks and securities markets. To remove these shortcomings, the central bank should play a dominant role in shaping a country's monetary policy.

The central bank acts as the fiscal agent of the government and thus manages the public debt. It issues government bonds and securities itself and through other commercial banks in the country. Since there is no well-established bill market in an underdeveloped country, it is the central bank which can set up and organise a stocks and securities market.

The hold of the village money-lender in rural areas can only be slackened if new institutional arrangements are made by the central bank in providing short-term, medium-term and long-term credit at lower interest rates to the cultivators. A network of co-operative credit societies with apex banks financed by the central bank can help solve the problem. With the vast resources at its command, the central bank can also help in establishing industrial banks and financial corporations in order to finance large and small industries.

Lastly, the central bank acts as the guardian of the money market. It has sufficient powers to control commercial banks as it desires. 'Central bank control of commercial banks' is a chief weapon of monetary policy.³ It can induce banks to make more medium and long-term loans by providing rediscounting facilities.

But 'monetary and financial institutions in themselves cannot be expected to be the primary and active movers of development in credit sense: Given the fundamental stimulus which comes from enterprise and entrepreneurship, the monetary system must then be sufficiently responsive to the stimuli that arise as development gains momentum.'⁴

2. **A Suitable Interest Rate Policy.** In an underdeveloped country the interest rate structure stands at a very high level. There are also vast

³Ibid., p. 103.

disparities between long-term and short-term interest rates and between interest rates and different sectors of the economy. The existence of high interest rates acts as an obstacle to the growth of both private and public investment in an underdeveloped economy. A low interest rate is, therefore, essential for encouraging private investment in agriculture and industry. Since in an underdeveloped country businessmen have little savings out of undistributed profits, they have to borrow from the banks or from the capital market for purposes of investment and they would borrow only if the interest rate is low. A low interest rate policy is also essential for encouraging public investment. A low interest rate policy is a cheap money policy. It makes public borrowing cheap, keeps the cost of servicing public debt low, and thus helps in financing economic development. Even from the point of view of foreign investors, the availability of cheaper money for 'complimentary funds' encourages private foreign investments. But a low interest policy is not an unmixed blessing in an underdeveloped country. It has certain disadvantages. It encourages borrowing and investment for speculative purposes and thus hinders the financing of productive investments. A low interest rate on government bonds makes them unattractive to the investors who are solely guided by the profit motive. A low interest rate also adversely affects the growth of saving in the economy.

In order to discourage the flow of resources into speculative borrowing and investment, the central bank should follow a policy of discriminatory interest rates, charging *high* rates for non-essential and unproductive loans and *low* rates for productive loans. But this does not imply that savings are interest-elastic in an underdeveloped economy. Since the level of income is low in such economies, a high rate of interest is not likely to raise the propensity to save. In the context of economic growth, as the economy develops, a progressive rise in the price level is inevitable. The value of money falls and the propensity to save declines further. Money conditions become tight and there is a tendency for the rate of interest to rise automatically. This would result in inflation. In such a situation any effort to control inflation by raising the rate of interest would be disastrous. Cheap money policy may thus lead to inflation if it is not accompanied by strict physical controls. A stable price level is, therefore, essential for the success of a low interest rate policy.⁵

3. Debt Management. Debt management is one of the important functions of monetary policy in an underdeveloped country. It aims at proper timing and issuing of government bonds, stabilizing their prices and minimizing the cost of servicing public debt. It is the central bank

⁵J.D. Sethi, *op. cit.*, pp. 94-97.

which undertakes the selling and buying of government bonds and making timely changes in the structure and composition of public debt. The primary aim of debt management "is to create conditions in which public borrowing can increase from year to year and on a big scale without giving any jolt to the system. And this must be on cheap rates to keep the burden of the debt low."⁶

In order to strengthen and stabilize the market for government bonds, the policy of low interest rates is essential. For, a low rate of interest raises the price of government bonds, thereby making them more attractive to the public and giving an impetus to the public borrowing programmes of the government. The maintenance of structure of low interest rates is also called for minimizing the cost of servicing the national debt. Further, it encourages funding of debt by private firms. Dr Sethi opines that to make the rate of interest play an active and useful role in any single market, the government should offer a wide range of securities. He maintains that if there is no demand for them, as is the case in an underdeveloped country, then the basic function of debt management policies is to create their demand.

However, the success of debt management, as an instrument of monetary policy, would depend upon the existence of well-developed money and capital markets in which wide range of securities exist both for short and long periods. To the extent these factors are absent, debt management becomes an Herculean task in an underdeveloped country.

4. Proper Adjustment between Demand for and Supply of Money. Monetary policy is an important instrument in bringing about a proper adjustment between demand for and supply of money. An imbalance between the two will be reflected in the price level. A shortage of money supply will inhibit growth while an excess of it will lead to inflation. As the economy develops, the demand for money is likely to go up due to gradual monetization of the non-monetized sector, the increase in agricultural and industrial production and prices. The demand for money for transaction and speculative motives will also rise. So the increase in money supply will have to be more than proportionate to the increase in the demand for money in order to avoid inflation. There is, however, the likelihood of increased money supply being used for speculative purposes, thereby inhibiting growth and causing inflation. The monetary authorities should control the uses of money and credit by an appropriate monetary policy and control speculative activities through direct physical controls. Thus in an underdeveloped economy, the supply of money and credit should be controlled in such a way that the price level is prevented from rising without affecting investment and production adversely.

⁶Ibid., pp. 106-107.

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production adversely.

⁶*Ibid.*, pp. 106-107.

5. Credit Control. Monetary policy should also aim at controlling credit in order to influence the patterns of investment and production in a developing economy. Its main objective is to control inflationary pressures arising in the process of development. This requires the use of both quantitative and qualitative methods of credit control.

Open market operations are not successful in controlling inflation in underdeveloped countries. The success of open market operations depends on: (a) the existence of a well organised bill market; (b) the maintenance of fixed cash reserve ratios by the commercial banks; and (c) the absence of rediscounting facilities from the central bank. But these factors do not operate in such economies. The bill market is small and underdeveloped. Commercial banks keep an elastic cash ratio because the central bank's control over them is not complete. They are also reluctant to invest in government securities due to their relatively low interest rates. Moreover, instead of investing in government securities, they prefer to keep their reserve in liquid form such as gold, foreign exchange and cash. Only the last condition is operative because commercial banks are not in the habit of rediscounting or borrowing from the central bank.

In underdeveloped countries, *the bank rate policy* is also not so effective due to the lack of bills of discount and the habit of the commercial banks to keep large cash reserves. Where the central bank is more powerful, it is able to influence the market rates by appropriate changes in the bank rate.

The use of the *variable reserve ratio* as a method of credit control is more effective than the open market operations and the bank rate policy. Commercial banks are able to create more credit in underdeveloped countries as they keep large cash reserves. The central bank can check this expansion by raising the compulsory reserve ratio.

The qualitative credit control measures are, however, more effective than the quantitative measures in influencing the allocation of credit, and thereby the pattern of investment. In underdeveloped countries, there is a strong tendency to invest in gold, jewellery, inventories, real estate, etc., instead of in alternative productive channels available in agriculture, mining, plantations and industry. The selective credit controls are more appropriate for controlling and limiting credit facilities for such unproductive purposes. They are beneficial in controlling speculative activities in foodgrains and raw materials. They prove more useful in controlling 'sectional inflations' in the economy. They curtail the demand for imports by making it obligatory on importers to deposit in advance an amount equal to the value of foreign currency. This has also the effect of reducing the reserves of the banks in so far as their deposits are transferred to the central bank in the process.

The selective credit control measures may take the form of changing the margin requirements against certain types of collateral, the regulation of consumer credit and the rationing of credit.

Of the various quantitative and qualitative methods of credit control, the latter are more effective than the former. But reliance on any one method would not suffice. Therefore, "along with the qualitative methods of credit control not only such methods as: (a) direct control of plant and equipment; (b) control of capital issues; (c) discriminatory taxes; and (d) control over imports and exports etc., will have to be instituted, but direct physical controls over commodity markets will have to be brought into make the general control policy a success."⁷

Conclusion. To conclude with Dr Baljit Singh, "Development of banking facilities and savings institutions, reorganization of agricultural and industrial credit, integration and improvement of the money market, growth of a sound central banking, closing of free markets in gold and silver, replacement of hoards and above all currency reforms are urgently needed. It is only after these deficiencies are made good that the monetary apparatus of economically backward countries can prove effective in aiding construction and development. If a country fails in this task it would either go slow, even stagnate or be compelled to switch over its economic system to overall planning and reallocation of resources through direct state control."⁸

⁷Op. cit., p. 102, italics mine

⁸Baljit Singh, *Federal Finance and Underdeveloped Economy*, p. 1

Chapter 40

FISCAL POLICY IN ECONOMIC DEVELOPMENT

MEANING AND IMPORTANCE

Fiscal policy means the use of taxation, public borrowing, and public expenditure by government for purposes of 'stabilization' or 'development'. The use of fiscal policy for the purpose of promoting economic development is of recent origin. The Keynesian analysis of fiscal policy is applicable to advanced economies. The role of fiscal policy in advanced economies is to stabilize the rate of growth. In the context of an underdeveloped economy, the role of fiscal policy is to accelerate the rate of capital formation. It is designed as an instrument of economic development. In the Keynesian analysis, fiscal measures are used to reduce savings and raise the propensity to consume. But an underdeveloped country is confronted with a different problem altogether. In such an economy, the propensity to save is extremely low and the propensity to consume is very high. What is required is a curb on the propensity to consume in order to raise the propensity to save. Thus the Keynesian analysis has little relevance to underdeveloped economies. As Nurkse puts it, "There is no doubt that Keynes' *General Theory* has a bias against saving and in favour of spending...but one that is pernicious when transplanted to the conditions in which the underdeveloped countries find themselves."¹

Fiscal policy plays a dynamic role in underdeveloped countries. In fact, an extensive use of fiscal policy is indispensable for economic development. Fiscal policy, in the words of Nurkse, "assumes a new significance in the face of the problem of capital formation in underdeveloped countries."² The per capita incomes and savings are extremely low in such countries. The few rich indulge in conspicuous consumption. A considerable portion of savings is dissipated in unproductive channels—in real estates, hoardings, jewellery, gold, speculation, etc. Fiscal policy diverts all these into productive channels.

Nurkse regards the country's incremental saving ratio—the marginal propensity to save—as the crucial determinant of growth.³ The

¹R. Nurkse, *op. cit.*, p. 148.

²*Ibid.*, p. 143

³*Ibid.*

incremental saving ratio can be raised by government expenditure in creating social and economic overheads, banking and credit institutions and in-establishing new industries. They will help raise employment, output and income levels in the country. Since the flow of voluntary savings is meagre in underdeveloped economies taxation is the most useful instrument for forced savings. Taxation effectively curtails conspicuous consumption and other wasteful expenditure of the richer classes. Thus taxation is an important and useful fiscal instrument for reducing private consumption, and transferring idle resources for capital formation by the government. As the *UN Report on Taxes and Fiscal Policy* says, "Fiscal policy is assigned the central task of wresting from the pitifully low output of underdeveloped countries sufficient savings to finance economic development programmes and to set the stage for more vigorous public investment activity."⁴

In an underdeveloped country where monetary policy alone is ineffective due to the existence of underdeveloped money and capital markets, fiscal policy can be used an important adjunct to monetary policy in accelerating the rate of capital formation.

Fiscal policy also plays a significant role in the development plans of underdeveloped countries. Under planning, a balance has to be achieved both in real and money terms. In other words, a physical plan has to be matched by a financial plan. "The implementation of the financial plan and the achievement of balances in real and money terms obviously will have to rely largely on fiscal measures."⁵

Objectives of Fiscal Policy

Fiscal policy as a means of promoting economic development aims at achieving the following objectives.⁶

1. **To Increase the Rate of Investment.** Fiscal policy aims at the promotion and acceleration of the rate of investment in the private and public sectors of the economy. This can be achieved by checking actual and potential consumption and by raising the incremental saving ratio. Fiscal policy should also be used to encourage some and discourage

⁴Op. cit., p. 3. Italics mine.

⁵Raja J. Chelliah, *Fiscal Policy in Underdeveloped Countries*, p. 23. Italics mine

⁶The UN, Report on 'Methods of Financing Economic Development in Underdeveloped Countries' (p. 15) mentions the following four objectives of Fiscal Policy in the context of underdeveloped countries:

"To correct excessive or harmful inequalities in the distribution of income and wealth and in doing so to expand internal markets and reduce unessential imports

To counteract inflation which might result from economic development

To provide incentives for desirable types of development projects and thus help to steer development into desirable directions

To increase the total volume of savings available for economic development"

other forms of investment. In order to raise the rate of investment, government should, in the first instance, undertake a policy of planned investment in the public sector. This will have the effect of increasing the volume of investment in the private sector. But the main problem in an underdeveloped country is to find out adequate financial resources for investment purposes in the absence of sufficient voluntary savings. Measures aimed at curtailing conspicuous consumption and investment in unproductive channels can make available some resources. Due to the non-availability of enough foreign capital, both private and public, the remedy is to raise the incremental saving ratio, the marginal propensity to save—through public finance, taxation and forced loans.⁷

Dr R.N. Tripathy⁸ suggested six methods which the government may adopt in order to raise the incremental saving ratio for the mobilisation of the requisite volume of developmental finance. They are: (i) direct physical controls; (ii) increase in the rates of existing taxes; (iii) imposition of new taxes; (iv) surplus from public enterprises; (v) public borrowing of non-inflationary nature; and (vi) deficit financing.

Direct physical controls are most effective in curtailing consumption and unproductive investment. Though they are difficult to administer in an underdeveloped country, direct physical controls are a necessary adjunct to fiscal policy. Imposition of new taxes and increase in the rates of existing taxes on a progressive scale are also essential. Measures which curtail consumption include steeply progressive income taxes, luxury import restrictions, high duty on luxury imports, ban on the manufacture of luxury and semi-luxury goods at home or restricting their use by licensing or by imposing heavy excise duties. In order to restrict the use of savings in unproductive investment high progressive taxes on windfalls, on unearned incomes, on capital gains, on expenditure and real estates, etc., should be levied. Surpluses from public enterprises can accrue if they are run efficiently. But due to their high cost of operation in the initial stages, they do not lead to surpluses. Moreover, there are not many public enterprises to warrant enough surpluses in economies.

We may also add to Dr Tripathy's suggestions the inflow of external assistance to fill the deficiency of domestic savings. External assistance should be directed in those channels where private enterprise is not forthcoming. It should also be used to develop private enterprise itself. Besides, "fiscal policy in the shape of fiscal concessions such as investment and depreciation allowances, provision of finance and foreign exchange, tax holiday, development rebates, subsidies, etc., can

⁷Nurkse, *op. cit.*, pp. 142-143.

⁸*Public Finance in Underdeveloped Countries*, p. 56.

contribute materially to the growth of investment in the private sector of the economy."⁹

Of all the methods, therefore, taxation is the most effective instrument of forced savings. Deficit financing in underdeveloped countries is always inflationary due to the lack of complementary resources. Borrowing from the public does not bring enough money to the exchequer in the absence of a properly developed capital market. Further, it is likely to raise interest rates thus affecting investment adversely.

2. To Encourage Socially Optimal Investment. Fiscal policy should encourage the flow of investment into those channels which are considered socially desirable. This relates to the optimum pattern of investment and it is the responsibility of the state to promote investment in social and economic overheads. Investment in transport, communications, river and power development, and soil conservation fall under economic overheads. While investment in education, public health and technical training facilities come under social overheads. These two categories of investments lead to external economies. They tend to widen the market, raise productivity, and reduce the cost of production.

Moreover, the creation of overhead capital is in keeping with the criterion of social marginal productivity. It creates external economies and thereby raises the marginal productivity of private investment. Thus private investment in useful and productive channels is encouraged.

But such investments requiring large funds cannot come from private enterprise which is lacking in initiative and capital. Moreover, private investment on them cannot be expected to be either quick or direct. Therefore, it is the duty of the state to bear the burden of expenditure on social and economic overheads that will go a long way in accelerating the process of capital formation.

3. To Increase Employment Opportunities. The main cause of unemployment in India is the rural surplus labour force. The rural areas have a large base of rural population, the majority of whom are engaged in agriculture. In view of the low productivity of agriculture, there is a constant pressure on land. Besides undertaking rural development projects, the government should also encourage industrialisation. In the initial days, concessions, cheap labour and other incentives should be made to encourage industrialisation.

⁹*Ibid.*, p. 51.

finance, and machines connected with them. Expenditure on all these short-term and long-term measures will go a long way not only in eradicating unemployment and underdevelopment but also in increasing employment opportunities.

In fact, public money will go waste if the growth rate of labour force is not checked along with the above measures. Since in underdeveloped countries population grows at a very fast rate, the objective of increasing employment is closely linked to that of stabilising the growth rate of population. Rapid economic development is only possible if the rate of increase in employment opportunities and hence in income is much higher than the growth rate of population. Fiscal policy should, therefore, provide more social amenities with a greater emphasis on family planning. Unless population is controlled, the objective of increasing employment opportunities cannot be fulfilled.

4. To Promote Economic Stability in the Face of International Instability. Fiscal policy should promote the maintenance of reasonable economic stability in the face of short-run international cyclical fluctuations. An underdeveloped country is prone to the effects of international cyclical fluctuations due to the very nature of its economy. It mainly exports primary products and imports manufactured articles and capital goods. In the event of a fall in the prices of agricultural and mineral products in the world market, the terms of trade become adverse, foreign exchange earnings decline and national income falls. Due to the inelastic nature of the supply of agricultural and mineral products, an underdeveloped country cannot take advantage of increasing its exports when their prices fall. Similarly, it is unable to take advantage of a boom in the world market. An improvement in the terms of trade is not accompanied by an increase in output and employment. On the contrary, increased export earnings are dissipated in conspicuous consumption, real estate, speculation, etc. They also lead to inflationary pressures in the economy.

Fiscal policy plays a crucial role in maintaining economic stability in the face of external and internal forces. In order to minimize the effects of international cyclical fluctuations during a boom, export and import duties should be levied. Export duties can siphon off the windfall gains arising from the rise in world market prices. But heavy import duties on consumer goods and luxury import restrictions are also essential to curb the use of additional purchasing power. The success of fiscal policy, however, depends to the extent luxury import restrictions and export and import duties are used for domestic savings and capital formation. In a period of recession in the world market, export earnings decline considerably and the export goods sector is hit hard. In such a situation, government should undertake large public works programmes through

deficit financing. But injections of additional purchasing power would tend to raise the prices of consumer goods due to their inelastic supply in the short-run.

Fiscal policy should, therefore, be viewed from a longer perspective. It should aim at the diversification of the economy—balanced growth of the various sectors of the economy. In order to reduce the effects of international cyclical movements, a contra-cyclical fiscal policy of deficit budgeting during depressions and surplus budgeting during inflation is also called for. Such a policy should, however, be supplemented by appropriate monetary measures.

5. To Counteract Inflation. Fiscal policy should aim at counteracting inflationary tendencies inherent in a developing economy. In such an economy, there is always an imbalance between the demand for and supply of real resources. With increasing injections of purchasing power into the economy the demand rises but the supply remains relatively inelastic due to structural rigidities, market imperfections and bottlenecks which impede the supply of essential goods. This tends to inflationary rise in prices. It may also tend to raise the wage bill in India in the organized sector of the economy which may in turn push up costs and thus give a further fillip to the rise in prices. The inflationary pressure will be still greater if large investments are diverted to the capital goods industry to the neglect of the consumer goods sector in the economy.

Direct taxes on progressive scale supplemented by consumption taxes are one of the effective fiscal measures for countering inflationary pressures in the economy. Such taxes tend to arrest at a low proportion of the rise in money income generated by an inflationary process. It is, however, imperative that the tax structure should be manipulated that it does not adversely affect incentives to work. The aim of fiscal policy is not only to arrest the inflationary tendencies but also to maintain some measure of stability in the economy. To achieve this, the fiscal role of the government should be exercised through fiscal bottlenecks and structural rigidities, pricing, the expansion of the various sectors of the economy, phasing down of import products, their purchase and sale by the government, the marketing of industrial and protection to essential consumer goods required for the economy. Above all, for fiscal measures to be effective they must be supplemented with monetary measures. The latter have an important rôle in controlling credit expansion, mopping up surplus purchasing power, and stimulating voluntary savings. To sum up, in a underdeveloped country, fiscal and monetary measures should be so adopted that they do not clash with the over-all objective of economic growth and stability.

6. To Increase and Redistribute National Income. Lastly, fiscal policy should increase national income and redistribute it in such a manner that the extreme inequalities of income and wealth are reduced in the economy. The importance of removing these inequalities of income and wealth can hardly be exaggerated. Extreme inequalities of income and wealth create social cleavages, lead to economic and political instability, and stand in the way of economic development. On the one hand, the few rich roll in wealth and misuse their income on conspicuous consumption and inventories, real estate, gold, foreign exchange, speculation, etc., while on the other hand, the masses groan under abject poverty and misery. The aim of fiscal policy is to remove these extreme inequalities and direct these misdirected and misused resources into productive channels for economic development.

The redistributive role of fiscal policy consists in increasing the real income of the masses and reducing higher income levels. Direct government investment in social and economic overheads tends to increase the volume of output, employment and real income in an underdeveloped economy. The economic position of the masses improves and their standard of living rises. This policy would be all the more effective in raising living standard and reducing disparities in income if the government launches upon a programme of balanced regional development of the different sectors of the economy.

In order to reduce higher income levels, fiscal policy should include a highly progressive and broad-based tax structure. Such a tax structure comprises taxation of incomes, wealth, expenditure and estates, etc. It should also include a stiff taxation of articles of conspicuous consumption. But in the interest of economic growth, a redistributive tax policy should not impinge on entrepreneurial incomes and thus sap whatever little incentive to entrepreneurial activity is to be found in an underdeveloped country. A more formidable problem is one of implementation and collection of the various direct taxes. Political pressures, lack of tax morality and the absence of an efficient and honest administration prevent fiscal policy from being an effective instrument of income redistribution in such countries. We should not, however, forget that one of the important objectives of fiscal policy is not only to redistribute income but also to increase national income. The latter is dependent on the former. Fiscal policy alone is insufficient to achieve these twin objectives fully due to the lack of a proper atmosphere and machinery to enforce and collect the various taxes in an underdeveloped country. As Nurkse reminds us: "Not a change in the interpersonal income distribution but an increase in the proportion of national income devoted to capital formation is the primary aim of public finance in the context of economic development."¹⁰

The success of fiscal policy in achieving these objectives depends on: (a) the amount of public revenue that it can raise, and (b) the amount and direction of public expenditure. The important fiscal means by which resources can be raised by the government are a budget surplus, taxation, and borrowing from the public and banks. These means should be used in such a way that they lead to economic growth and stability.

Taxation as the Most Effective Instrument of Fiscal Policy

Of all the means, taxation is perhaps the most effective instrument of fiscal policy. A budget surplus may be achieved through higher prices and tax rates. Borrowing from the public is likely to raise interest rates thereby affecting investment adversely. While obtaining funds from the banks will tend to raise prices and divert resources. The actual efficacy of fiscal policy will thus depend on the country's taxation structure. "The importance of taxation is that the state enforces an act of savings, whereas the act of investment can be public, private, or a mixed institutional arrangement."¹¹ As the *Economic Bulletin for Asia and the Far East* states: "Taxation, therefore remains as the only effective financial instrument for reducing private consumption and investment, and transferring resources to the government for economic development."¹² For the purpose of promoting a country's economic development, taxation may be used to achieve the following objectives: (i) To put a curb on consumption and thus transfer resources from consumption to investment; (ii) to increase the incentives to save and invest; (iii) to transfer resources from the hands of the public to the hands of the government in order to make public investment possible, (iv) to modify the pattern of investment, (v) to reduce economic inequalities; and above all (vi) to mobilise economic surplus.¹³

Importance of Taxation. We may discuss the role of taxation in economic development in the light of these objectives.

(i) Taxation is the most important instrument in curbing the increased demand for consumer goods generated by the development process. As individual incomes increase with development, they tend to raise the demand for consumer goods. Direct taxes curtail consumption by taking away a part of increased incomes of the higher income groups; while indirect taxes on essential commodities and non-essential luxury and semi-luxury articles reduce the consumption power of the low income groups as well. Thus the government is able to transfer resources through taxation from private consumption to public investment. Moreover, it is also through taxation that the state is in a position to

¹¹Meier and Baldwin, *op. cit.*, p. 386

¹²Quoted in Raja J. Chelliah, *op. cit.*, p. 55.

¹³*Ibid.*, p. 53

control inflationary pressures within the economy. By draining off a part of increased incomes, taxes tend to bring down the total demand so as to match the available supply of consumer goods. Since the marginal propensity to import is high in such economies, it is necessary for the state to watch that the increased incomes do not lead to increased imports and thus create balance of payments difficulties. Import duties levied to check imports may bring greater pressure on domestic supplies of consumer goods, and accentuate inflationary tendencies. It, therefore, requires a careful and integrated choice of taxes to check inflationary pressures and bring stability in the economic system.

(ii) Taxation should not merely aim at obtaining larger revenue but should also act as an incentive to save and invest. Highly progressive direct taxes for raising more finance for public consumption and investment expenditure adversely affect the incentives to save and invest. Similarly, too many indirect taxes discourage private saving. Therefore, taxation should not be regressive in nature. Direct taxes should be so levied that while taking away a portion of the increased incomes, they leave enough for those who save to invest. In this respect, property tax and expenditure tax are better than income tax. The former curtail consumption while a high income tax discourages saving and investment. Fiscal concessions, such as investment and depreciation allowances, tax holiday, tax rebates, etc., should be provided as an incentive to investment. Similarly, indirect taxes should curb conspicuous consumption and be not so heavy as to raise the prices of articles to such an extent that their production is affected adversely. Thus taxation should provide sufficient incentives to private saving and investment.

(iii) In an underdeveloped country, taxes are the most efficient way of transferring resources to the government for their more productive utilisation. In order to break the vicious circle of low income, low saving and low investment in such economies, public investment is required to be stepped up. Private enterprise is confined to small businesses and a few selected large enterprises producing consumer goods. They do not generate enough savings to be utilised for reinvestment. Moreover, the tendency is to invest these business savings in unproductive channels, such as in gold, real estates, speculative activities, etc. By levying taxes on income, land, property, expenditure, profits, wealth, etc., the government can siphon off increased incomes to the treasury for their proper utilisation through public investment. Thus taxation helps in transferring resources from unproductive to productive channels via public investment.

(iv) Taxation should modify the pattern of investment in the economy. We have seen above that one of the functions of taxation in

underdeveloped countries is to transfer resources from the private sector to the public sector. But this does not mean that taxation is aimed at supplanting private investment. Rather, taxation should encourage and redirect private investment into more productive channels. The government should provide sufficient incentives to private enterprise in the form of development rebate, tax holiday, accelerated depreciation allowance, etc., so that manufacturing industries are started and expanded within the economy. This will lead to larger profits which can be ploughed back for investment. Taxes should be such as not to reduce the volume of reinvestable funds. On the other hand, tax financed public investment should be directed towards the creation of social and economic overheads like education, health, transport, power, and other services. Thus taxation should aim at encouraging and strengthening private investment along with public investment.

(v) One of the important objectives of taxation is to reduce the gap between the incomes of the rich and the poor. Reduction of inequalities of income and wealth require separate measures. Highly progressive taxation of total income tends to reduce the consumption and accumulation of wealth of the rich. But such a policy may adversely affect productive investment. So when a highly progressive income tax is levied on individuals and corporations, it should be accompanied by certain exemptions in order to lessen the effects of taxation on business investments. To reduce the concentration of wealth in the hands of the few rich and inequalities of wealth, progressive taxation of gifts, inheritances, and wealth is suggested. Such taxes should be so levied that they do not lead to dissaving on the part of the tax payers. As observed by Professor Kaldor, "In most underdeveloped countries, where extreme poverty co-exists with greater inequality in wealth and consumption, progressive taxation is, in the end, the only alternative to complete expropriation through violent revolution. It is the only alternative instrument for curbing the power of wealth, for mobilising resources for developing and for loosening the paralysing hold of traditional, social and economic relationship." Thus progressive taxation is essential for removing inequalities of income and wealth.

(vi) Taxation should mobilise economic surplus for development and continually enlarge its size. According to Professor Chelliah, in underdeveloped countries agriculture contributes more than half the national output and a major part of it goes to the landlords, merchants and intermediaries. This is economic surplus which is the difference between actual current output and actual current consumption. Such surplus may also exist in other sectors of the economy. It is essential that in the early stages of development a large part of the surplus be mobilised into productive channels. In such economies the landlords,

merchants and intermediaries are in the habit of investing this surplus in unproductive channels like gold, jewellery, real estates, speculative activities and conspicuous consumption. Therefore, the government should mobilise this surplus through increased land tax, agricultural income tax and special assessments like betterment levies for financing such development projects as irrigation works, flood control system, improved agricultural services, etc. The latter also help in enlarging the size of economic surplus by increasing agricultural productivity and output. As pointed out by Professor Kaldor, "The taxation of agriculture by one means or another has a typical role to play in the acceleration of economic development."

These objectives of taxation are in keeping with the broader objectives of fiscal policy enumerated in the preceding pages. The problem, however, is to build a taxation structure that is conducive to the attainment of these objectives. In an underdeveloped country the taxation base is narrow. So in making a choice among the various types and kinds of taxes the state has to take into consideration, besides the above objectives, such matters as the country's taxable capacity, the administrative ability to enforce taxes and collect them efficiently and justly, and the effect of rising and increasing taxes on the social and political structure of the country.

Role of Public Borrowing in Economic Development

Borrowing from the public can be another important source of capital formation in underdeveloped countries. This device is better than taxation. Taxation implies forced saving; borrowing is voluntary. The tax payer is never happy in paying a tax, for he does not expect to get his money back. A lender, on the other hand, gives his money on loan of his own accord to receive it back along with interest after a stipulated period. Unlike taxation borrowing does not adversely affect incentives to save and invest. The lure of interest is always there to increase the incentives instead.

Public borrowing acts as an anti-inflationary measure by mobilizing surplus money in the hands of the people in a developing economy. A successful public borrowing programme can be a useful tool of economic development by diverting resources from unproductive channels, i.e., real estates, jewellery, gold, etc., to productive channels. Public borrowing is resorted to for specific development projects like power generation, irrigation works, roads, railways, etc. Thus it is a useful method of financing development projects.

But the scope of voluntary public borrowings is limited in underdeveloped countries due to low levels of income, low savings and high propensity to consume of the masses. The few rich are not likely to be

attracted by government loans which are not so lucrative as investment in real estates, gold, speculation, etc. The government is also not in a position to borrow much due to the absence of organized money and capital markets. The banking and financial institutions are very few and bonds or securities are not so popular. Lastly, popular confidence may be lacking in the financial and political stability of the government. Domestic borrowing can, however, increase as development gains momentum whereby incomes and savings tend to rise. In the meantime, certain measures can be adopted to increase the extent of public borrowing by making loans more attractive and by tapping small savings.

Firstly, the government should discourage savings being spent in unproductive channels say, gold, jewellery, real estates and on ostentatious articles. The masses should be encouraged to save more. This can be done by education, propaganda and persuasion. *Secondly*, there should be a network of intermediate agencies to attract savings from the people. The establishment of savings banks, commercial banks, insurance companies, unit trusts, social security institutions, etc., can induce people to save more. *Thirdly*, a well-organized bill market should be established. There should be a variety of government bonds which would provide better marketability and competitive rates with private issues and through such special features as ready convertibility to each, acceptance of government securities at par with gold for tax payment by masses. *Lastly*, the success of public borrowing programme will depend on the extent of the confidence people have in the political and financial stability of the government. A rising level of real income with no threat of inflation will go a long way in making government borrowing a success.

Despite all these measures, if sufficient funds are not forthcoming in the form of voluntary loans, the government may have to resort to compulsory borrowing for the mobilization of resources for capital formation. Compulsory public borrowing is, therefore, justified in those underdeveloped countries where taxation and voluntary borrowing fail to bring adequate funds for development to the exchequer. Certain sections of the society who dissipate a larger portion of their income in unproductive channels or derive special benefits from particular development projects may be forced to subscribe to government bonds. Nurkse justifies the use of compulsory borrowing in these words, "Since individuals are interested not only in their consumption but also in the size of their asset holdings, there is a case for forced loans as alternative to taxation. They may be little more than tax receipts and make a difference to the incentive to work and to produce as was during the war period when the unspendable cash."

as a result of rationing thus made consumers feel much better off. Forced loans in place of taxation would be a method of forced saving in form as well as substance."¹⁴ But it is not advisable for an underdeveloped country to rely on this method of development finance except for specific development projects and for a short period. Ultimately governments will have to depend on voluntary borrowing. The government of India's voluntary borrowing programme has been a great success.

Role of Public Expenditure in Economic Development

In underdeveloped countries, private enterprise is reluctant to invest in risky channels and where returns on capital are not quick. The few rich lack in initiative and enterprise and invest in gold, jewellery, real estates, speculative activities, etc. A small number undertakes investments in consumer goods industries, plantations and mines. Under the circumstances, rapid economic development is only possible through public expenditure. It, therefore, devolves on the state to assume the responsibility of creating the infrastructure needed for progress. The state has larger financial resources and is in a better position to start economic and social overheads requiring long gestation periods. The role of public expenditure in economic development lies in increasing the growth rate of the economy, providing more employment opportunities, raising incomes and standard of living, reducing inequalities of income and wealth, encouraging private initiative and enterprise, and bringing about regional balance in the economy.

Public expenditure on the establishment of heavy and basic goods industries in the initial periods increases the growth rate of the economy. But investment in the capital goods sector may increase production in the long run. Therefore, public expenditure should also be directed towards meeting the immediate needs of the economy. Such a pattern of public investment is essential to secure a balance between the demand and supply of goods in order to prevent inflationary tendencies. Public expenditure should, therefore, be directed towards increasing agricultural productivity to meet the growing demand for goods and raw materials, and increasing the supply of consumer goods by encouraging the establishment and expansion of the small industries sector which may also provide sufficient employment opportunities. The growth rate of the economy can be increased only when public expenditure fulfils the short-term and long-term objectives of the development plan.

Public expenditure on economic and social overheads provides larger employment opportunities, raises incomes and, above all, the productive capacity of the economy. When the state starts public works like the

construction of roads, railways, power projects, canals, etc., it gives employment to millions of unemployed people in underdeveloped countries. The provision for such services helps to increase production, trade and commerce. Public expenditure on social overheads like education, public health, cheap housing, etc., makes the people healthier and efficient. It is the state which can create the "critical skills" needed for rapid development by investing in human capital.

Public expenditure also helps in improving the allocation of resources toward desired channels. In order to remove scarcities of food products during stringencies, the state opens fair price shops and may even subsidise food for the working classes to maintain their health and efficiency. It may fix minimum prices for foodgrains, and through state trading and creation of buffer stocks encourage farmers to produce more. To increase the production of certain essential commodities and to end private monopoly in various spheres of production, the state may start public enterprises. It may also nationalize banks and public utility services in order to provide cheap and more efficient facilities to the people. Public expenditure can thus spread to all spheres of economic activities.

Underdeveloped countries are characterized by extreme inequalities of income and wealth. Public expenditure tends to lessen them. Expenditure on education, public health and medical facilities helps in human capital formation. As a result, the earning power of the working population is enhanced. As economic development proceeds rapidly through rising public expenditure, the barriers to upward mobility are removed. Occupations expand and spread, providing more jobs to the people, and with the acquisition of skills, the level of wages tends to rise within the economy. Moreover, industrialization tends to increase the share of wages and decrease the share of profits in national income in the long run, and the gap between higher and lower incomes is narrowed.

Further, public expenditure helps in stimulating private enterprise through the establishment of state-owned financial and banking institutions to provide cheap credit, such as the Industrial Finance Corporation of India, the Industrial Development Bank of India, State Financial Corporations, the State Bank of India, etc. Public expenditure also encourages the agricultural and industrial sectors of the economy by means of grants, subsidies, tax exemptions, etc. Moreover, when the state spends on the creation of economic and social overheads like power, transport, education, etc., they pave the way for the establishment and expansion of the private sector. The creation of the

infrastructure leads to external economies that are reaped by the private sector.

Last but not the least, public expenditure helps bring about regional balance in the economy. If things were left to market forces, commerce, banking, industries and almost all the main activities would be localised in a few selected regions, and the rest of the economy may be in a state of perpetual backwardness. As a matter of fact, economic development in India under the British rule was confined to a few regions like Maharashtra, and cities like Bombay, Calcutta, Madras, Kanpur, Ahmedabad. It is only through planned public expenditure that less developed areas can be developed by starting certain projects like the building of a dam, digging a canal, and starting some new industry there. The setting up of steel plants at Bhillai, Bokaro, Durgapur, Rourkela, the heavy electrical plants at Bhopal and Hardwar, and about eighty other public sector undertakings in the backward areas of the country are intended to bring about balanced economic development. Thus public expenditure is one of the important instruments for accelerating development in underdeveloped countries.

Chapter 41

DEFICIT FINANCING AS AN INSTRUMENT OF ECONOMIC DEVELOPMENT

MEANING

The phrase 'deficit financing' is used to mean any public expenditure that is in excess of current public revenues. In advanced countries, deficit financing is used "to describe the financing of a deliberately created gap between public revenue and public expenditure or a budgetary deficit, the method of financing being borrowing of a type that results in a net addition to national outlay, or aggregate expenditure."¹ Thus government expenditure financed by borrowing from the public is included in deficit financing. Another method usually followed is deficit financing by "created money." Deficit financing in the context of an LDC has a different connotation. It excludes expenditure financed by borrowing from the public. In an LDC, income is low but the propensity to consume is high, thus voluntary savings are at a very low level. If investment is tied to the current level of voluntary savings, the growth of real income will be retarded. Savings will remain low and so will investment. Deficit financing is thus seen as a way of breaking this deadlock by forced savings. Moreover, budget-deficit financed by borrowing from the public implies simply diversion of existing resources for capital formation. But the term deficit financing is applied to that expenditure which is financed only by such means as tend to increase the total outlay in the country. As V.K.R.V. Rao puts it, "investment involves outlay, which constitutes either an addition to, or a re-allocation of national spending or both as the case may be. It is only in the former case that investment outlay involves deficit financing."² According to the Indian Planning Commission, "The term deficit financing is used to denote the direct addition to gross national expenditure through budget deficits, whether the deficits are on revenue or on capital account. The essence of such a policy lies in the government spending in excess of the revenue it receives in the shape of taxes, earnings of state enterprises, loans from the public, deposits etc."

¹V.K.R.V. Rao, *Essays in Economic Development*, p. 105.

²Ibid., p. 107.

an unmixed blessing. It has its dangers. The dangers are inherent in its inflationary potential. When deficit financing merges into inflationary finance, it defeats its own purpose. A continuing rise in prices is a dangerous way of promoting economic development. Inflation is not only economically but also socially undesirable as a method of financing development, that is why, it is the most dreaded method of accelerating the rate of economic growth. When the government invests the newly created money on capital projects, incomes of the people engaged in these projects and related services increase, and with that their high propensity to consume is further intensified. The existence of various market imperfections, of the little excess capacity in plant and equipment, and of low elasticities of food supplies stand in the way of increasing the supply of consumer goods in proportion to the expansion in money supply. All these factors tend to raise the prices of consumer goods and if they are not checked in time, they spread over the entire economy. Dr Rao assigns four reasons as to why "the danger of the initial rise in prices taking on the character of inflation is greater in the case of deficit financing by government: (i) Expansion of currency brings with it the possibility of a greater expansion of money supply through the expansion of credit; (ii) Absence of direct return, i.e., absence of supplies of goods and services resulting from the outlay and saleable by government to the public, lessens the possibility of mopping up the additional incomes created by additional outlay; (iii) Absence of saleable securities against which the government outlay is undertaken, lessens the chances of mopping up additional income created by the additional outlay; (iv) Great possibility of waste and failure to promote greater productivity associated with government investment in the absence of an exceptionally competent and honest standard of public administration leads to a failure of output to rise and compensate the additional purchasing power created by the additional outlay. Because of these reasons, deficit financing by government has always been looked upon as containing inflationary possibilities even when it is undertaken for development."⁷

LDCs are characterized by *market imperfections*. There is immobility of resources which leads to low elasticities of supplies. Such economies also lack large volume of fresh resources the demand for which is created by increased government spending. Moreover, resources being immobile create shortages in particular industries, sectors or regions.

⁷V.K.R.V. Rao, *op. cit.*, p. 115. In a recent study Dr Rao observes, "A certain minimal rise in the price level is...inevitable in any process of deliberately forcing the pace of development. The price rise becomes inflationary only when every rise in the price level becomes the base for a further rise in the price level and the process becomes not only self-sustaining but also self-accelerating." *Inflation and India's Economic Crisis*, 1973.

All these factors create more shortages in supplies in relation to a high demand, thereby leading to inflationary rise in prices.

When incomes increase as a result of deficit spending, they tend to increase the demand for food products. In underdeveloped countries the elasticity of demand for food being as high as 0.8, the expenditure on food increases more than proportionately to the rise in the incomes of the people. Since the supply of food does not increase much due to low-level of agricultural productivity, the prices of food articles rise and spread to the entire economy.

If the newly created money is used to finance quick-yielding projects which tend to increase output within a short period there is little price rise. Similarly, if it is used for producing consumer goods, deficit financing will not be inflationary as the supply of consumer goods will increase to match the increased purchasing power in the hands of the people. On the contrary, the use of created money for financing long-term projects and for creating capital goods is bound to be inflationary, for such schemes require larger doses of investment and a longer gestation period. As such output lags behind the increased money supply. Lewis holds the view that "inflation for the purpose of capital formation is in due course self-destructive. It has three stages. Prices rise sharply in the first stage while the capital is being created. In the second stage, the inflation may peter out of its own accord because the rise in prices has redistributed income in such a way that voluntary savings are rapidly catching up with investment. Then in the third stage prices fall, as the additional output of consumer goods made possible by the capital formation begins to reach the market. It is only the first stage that is dangerous and painful."⁸ Thus the period of inflation will be short because increased investment will lead to the production of additional goods and services and to increased incomes and savings which can then be taxed by the state. Lewis' view that inflation for the purpose of capital formation is self-destroying is based on the Keynesian multiplier theory and the assumption of stable marginal propensity to save and consume. In other words, it depends on how far the people in the LDCs who receive the extra money income will continue to save and spend it in stable proportions in the face of the rising prices of consumer goods. According to Myint, it seems very difficult to believe that inflation will be self-destroying in the face of acute shortage of consumer goods, and of the tendency of the marginal propensity to consume to be near-unity in LDCs.

It is argued that inflation affects the habit of voluntary saving adversely and that its ability to force savings is also limited. In the face

⁸W.A. Lewis, *op. cit.*, p. 405

If, however, this amount is not injected into the economy, it will have a deflationary impact on it. Further, in a developing economy, a larger quantity of money than just the 'critically minimum' can be injected safely into the economy for development purposes. For instance, a 7 per cent increase in money supply will not be inflationary because development projects can absorb this much increase.

2. Growth of the Monetised Sector. To the extent the non-monetised sector is transformed into the monetised sector, the additional supply of money is not inflationary.

3. Increase in Loans and Taxes. Deficit financing is successful as an instrument of capital formation to the extent the deficit-induced additional income is mopped up in the form of loans and taxes. As Lewis observes, "If the government wishes the inflation to peter out as soon as possible, by maintaining its new higher levels of expenditure (in real terms), and if it cannot rely on the savers hoarding their savings, then it must get hold of the savings in some other way either by taxing them away or by offering favourable terms for government bonds."¹¹

4. Control over Wages and Prices. The success of deficit financing also depends on the extent to which prices and wages are controlled in the economy. In order to prevent wages from rising, prices should be controlled and there should be a controlled distribution of consumer goods. The policy of 'credit-curb' and 'credit-regulation' should also be followed by the central bank.

5. Creation of Import Surplus. Deficit financing is non-inflationary to the extent the government is in a position to create import surplus. This can be done by the government buying foreign exchange from the central bank against its cash balances to finance imports of capital equipment, industrial raw materials and foodgrains, as is being done in India.

6. Increase in Supply of Goods. Deficit financing leads to inflation when more money is chasing fewer goods. To the extent this gap between money-supply and supply of goods is bridged, deficit financing is non-inflationary. For this purpose, in the earlier stages of economic development, those projects should be promoted which have a short gestation period, and thus increase the supply of consumer goods quickly.

7. Increase in Equity Capital, Undistributed Profits and Budgetary Surpluses. Kurihara suggests that 'one should have concrete information or projections concerning the relative importance of debt and equity financing, of external and internal financings and of private and public savings. For inflation is known to react favourably on equity

¹¹*Op. cit.*, p. 233.

dividends, corporate and business profits and government tax revenues. In the overall scheme of developmental financing equity capital, undistributed profits and budgetary surpluses may play so preponderant a role as to render superfluous all apprehensions about the destructive effect of inflation on private saving."¹²

8. Spirit of Sacrifice. The safe limit to deficit financing depends upon the extent to which people appreciate and undertake sacrifices involved in deficit financing for economic growth. As Dr Rao stresses, "I would like to emphasize the role of public understanding and public cooperation as a positive factor intending to diminish the price effect to deficit financing. In the popular view, deficit financing is associated with inflation. Not only is understanding required of deficit finance for capital formation but also public cooperation in the implementation of the policies for minimizing the price effect of deficit financing for capital formation."¹³

Conclusion. To conclude, the use of the deficit financing for economic development "may be likened to fire which if unregulated produces havoc, while regulated, it gives light and warmth. The danger is, therefore, not so much in the instrument itself as in the use to which it is put. Much depends on the degree of caution we exercise."¹⁴

¹²*Op. cit.*, p. 149.

¹³*Op. cit.*, p. 40.

Chapter 42

PRICE POLICY IN ECONOMIC DEVELOPMENT

THE NATURE OF PRICE POLICY

Rise in prices is inherent in the development process. Imbalance between demand and supply of commodities and factors is inevitable under development planning. The demand for goods and services rises as a result of stepping up investments on a large scale and the consequent creation of money income. Ever mounting administrative, non-developmental and defence expenses and population pressures give a further pull to demand. But supply fails to meet the increased demand as investments in underdeveloped countries are made on such projects that take a long time to mature. Backward technology, low skills, market imperfections and various other bottlenecks, restrict the supply of consumer goods. The gap between demand and supply leads to rise in prices.

OBJECTIVES OF PRICE POLICY

Price policy is not merely concerned with holding the price line or keeping prices stable at any given level, but it is equally concerned with the movements of general as well as relative prices of goods and services.

1. **To Establish Equilibrium between Demand and Supply of Goods and Services.** In considering the theory of price policy in the context of planned economic development, Dr V.K.R.V. Rao¹ emphasises that price is an important economic mechanism performing certain functions, and any price policy should be in this functional context. Primarily, this function is to bring about the required equilibrium between demand and supply of goods and factors. When they perform their economic function, price movements should be of a self-liquidating character. It is not necessary that a rise in the comparative price levels of individual commodities should lead to a general price rise. Increases in individual prices liquidate themselves without bringing about a rise in the general price level when the former bring into use additional productive resources or raise the level of productive efficiency of

¹V.K.R.V. Rao, *Essays in Economic Development*, Ch. 6.

existing resources. It means that in order to avoid a rise in the general levels of prices total output should be raised to meet the increased demand for individual commodities.

2. To Bring Flexibility in Prices. But in an underdeveloped country undergoing the process of economic development aggregate production takes much longer time to increase than in a developed one, as a result a rise in the general level of prices usually accompanies an increase in the prices of individual commodities. However, all price rises should not be regarded as socially undesirable. It is only when an individual or general price rise fails to increase output or to reduce demand that it is considered harmful. Thus price policy should aim at *flexibility* in prices in order to redirect demand, reallocate productive resources and reorientate output towards the desired direction.

3. To Stabilise Prices of Consumer Goods. It should also aim at stabilizing prices of basic consumption goods so as to avoid inflationary pressures arising from investment projects of long gestation in an underdeveloped country. But "a rigid, stable general level of prices may be as much of a dead weight on economic growth as a rapidly rising price level."² A stable price level may retard growth whereas a rising price level may distort investment and incomes. The right and appropriate price policy in this context must achieve the objective of increasing the production both of basic consumption and investment goods.

4. Two Aspects of Price Policy. According to Professor Rao,³ "a rightly conceived price policy for aiding economic development should, broadly, have both a macro and a micro aspect." In its *macro* aspect, it essentially takes the form of monetary and fiscal measures which are meant to influence the creation of income and its utilization. The Indian Third Plan Report also recognizes that a major constituent of price policy is monetary and fiscal discipline.⁴ Monetary policy should prevent expenditure and consequent income creation going in the wrong direction. Speculative holding of commodities and accumulation are to be discouraged in particular. An appropriate interest rate and selective credit control policy may help in this direction. *Fiscal policy must go along with monetary policy.* The latter regulates the creation of excess purchasing power through banks and the former through government action. Both policies also help in maximizing savings of the community. But fiscal policy should in particular try to reduce incomes through appropriate tax measures. It should help in restraining consumption and mobilizing saving more effectively, and transfer real sources from the

²V.K.R.V. Rao, *op. cit.*, p. 146

³Ibid

⁴GOI, *Third Five Year Plan*, p. 127

community for public investment programmes instead of creating fresh purchasing power. "In other words, macro policy in regard to prices operates not through a direct impact on individual prices but indirectly through its impact on income creation and income utilisation and, therefore, on the two variables that determine the monetary framework from all changes in prices."⁵

In its *micro aspect*, price policy is more direct and essential under development planning. It should aim at increasing the output of consumption goods along with investment goods in order to match increased consumption expenditure resulting from increase in investment outlay. Such a policy would encourage the use of resources for the production of investment and basic consumption goods and help avoid inflationary pressures. In other words, price mechanism should act both as a stimulant and a deterrent. Purposive and differential price policies should be followed for the production of specific commodities and their utilization. This necessitates physical allocation and direct controls. In respect of basic consumption goods, like foodgrains, cloth, edible oils, etc., prices should be held reasonably stable through state trading and control at the retail and wholesale stage.

5. Agricultural Price Policy. A suitable agriculture price policy holds the key to development in an underdeveloped economy. Agricultural prices are quickly responsive to demand and supply conditions. Since agricultural output constitutes 50 per cent or more of the national product, the general price level is mostly determined by the behaviour of agricultural prices. The agricultural price policy should aim at reducing price fluctuations of agricultural commodities so as to reduce the loss to the producer from a sharp price fall following the bumper crop, and to minimize the difficulties of the consumers from sharp price rises as a result of crop failures or short supplies. For this, price policy should be comprehensive enough to include measures from the production of agricultural products to their distribution. In order to stimulate their production, various land reform measures should be adopted, dependence on nature be minimized, and inputs like fertilisers, improved seeds and implements be supplied at subsidised rates or even at short-term credit. But the important tenet of this price policy is the fixation of minimum and maximum prices for all major agricultural crops. The minimum prices should be so fixed as to provide proper incentives to producers after taking into account regional variations in the costs of production of different crops. It implies slight price variations for the same crop in different regions. The maximum prices reflect only a payment to the producer for the quality variations in the

⁵V.K.R.V. Rao, *op. cit.*, p. 151.

crops.⁶ A successful price policy also includes the creation of buffer stocks and their operation through continuous purchase and sale over a wide range. Such purchase and sale operations should be undertaken by the state and its agencies. 'A network of cooperative and governmental agencies close to the farmer, licensing and regulation of wholesale trade, extension of State trading in suitable directions and a considerable sharing by government and cooperatives in distribution arrangements at retail stage are essential for the success of purchase and sale operations for stabilizing prices and correcting seasonal and regional variations. Pursuit of these policies will be necessary if both the economic and psychological factors affecting the prices of essential consumer goods are to be brought under control.'

6. Price Policy for Consumer Goods. In the case of non-essential consumer goods which fall in the category of comforts and luxuries, price determination should be left to market mechanism. If need be, price rise may be allowed but it should be accompanied by high taxes and controlled allocation of resources.

Another aspect of micro price policy is to raise the prices of the exportable commodities for the domestic consumer in order to supply them cheaper to the foreign consumer for the purpose of earning more foreign exchange. Fixation of the price of sugar in India is in keeping with this policy. It is not a healthy policy because it is like starving one's family in order to feed others.

7. Price Policy for Industrial Raw Materials. Specific measures are also called forth for regulating the prices of industrial raw materials like coal, cement, iron and steel, etc. Just as stabilization of agricultural prices goes a long way in stabilizing the industrial prices, likewise stabilization of the prices of industrial raw materials contributes much towards stabilizing the prices of goods produced from them. Price policy should ensure their proper utilization and distribution so as to avoid inflationary pressures. Price rises should be permitted in their case keeping in view the need to promote exports to control domestic consumption or to provide incentives for further investment and production. Prices should be so fixed as to avoid excessive profit margin, at the same time providing incentives to production. Such a policy also necessitates the use of price and distribution controls in respect of such commodities.

8. Price Policy in Relation to Enterprises. In a mixed type of underdeveloped economy like ours both the public and private enterprises are expected to play an important role in the economic development. Public enterprises should follow such a price policy as

brings in larger profits commensurate with social welfare and thus help augment public savings. The private sector has to play a still more significant role in this context, since it predominantly supplies consumption goods. A rising price level would have a favourable effect on the expectations of the entrepreneurs. "To the extent the rising price level is able to transfer incomes from the passive rentier class to the active entrepreneurial class it will exercise a beneficial influence on the levels of savings, investment and output." But the price rise should be gradual and slow where there are competitive product and factor markets so as to affect a right allocation of investible resources among them. Price policy should, therefore, aim at bringing about a proper structure of production and distribution. An absolute and relative price behaviour should be established to promote economic development through rising levels of income, saving and investment.⁷

9. Relation between Price and Wage Policy. A rational price policy should aim at reducing the scope of automatic linkages between price and wage increase in the economy. Wage incomes and prices are interrelated. When prices rise, wage-earners struggle for increased wages. When wages rise, they tend to push up prices in the absence of a matching supply of essential consumer goods. A wage-freeze policy is no remedy since it adversely affects efficiency and productivity. It is, therefore, better to have a wage policy in the interest of orderly development. "A steady and calculated wage increase is better than an abrupt jump with every price change."⁸ Wages should rise in those sectors where the prevailing average wage is below the minimum consumption level. Wage increase should, however, be related to productivity. But even the productivity-oriented wage policy cannot stabilize wages and hence prices, unless continuous supplies of essential consumer goods are forthcoming at reasonable prices. Thus price policy should ensure the avoidance of a spiralling of costs, prices and wages through their mutual interaction.

⁷*Ibid.*

⁸*Ibid.*

Chapter 43

POPULATION GROWTH AND ECONOMIC DEVELOPMENT

EFFECTS OF POPULATION GROWTH ON ECONOMIC DEVELOPMENT

The consequences of population growth on economic development have attracted the attention of economists ever since Adam Smith wrote his *Wealth of Nations*. Adam Smith wrote, "The annual labour of every nation is the fund which originally supply it with all the necessaries and conveniences of life." It was only Malthus and Ricardo who created an alarm about the effects of population growth on the economy. But their fears have proved unfounded because the growth of population in Western Europe has led to its rapid industrialization. Population growth has helped the growth of such economies because they are wealthy, have abundant capital and scarcity of labour. In such countries, the supply curve of labour is elastic to the industrial sector so that even a high growth rate of population has led to a rapid increase in productivity. In fact, every increase in population has led to a more than proportionate increase in the gross national product.

Population and Economic Development. However, the consequences of population growth on the development of LDCs are not the same because the conditions prevailing in these countries are quite different from those the developed economies. These economies are poor, capital-scarce and labour-abundant. Population growth adversely affects their economic development in the following ways. *First*, faster population growth makes the choice more scarce between higher consumption now and the investment needed to bring higher consumption in the future. Economic development depends upon investment. In LDCs the resources available for investment are limited. Therefore, rapid population growth retards investment needed for higher future consumption. *Second*, rapid population growth tends to overuse the country's natural resources. This is particularly the case where the majority of people are dependent on agriculture for their livelihood. With rapidly rising population, agricultural holdings become smaller and unremunerative to cultivate. There is no possibility of increasing farm production through the use of new land (extensive cultivation). Consequently, many households continue to live in poverty. In fact, rapid population growth leads to the overuse of the land thereby

jeopardising the welfare of future generations. Even in countries where natural resources are untapped such as Brazil and other Latin American countries, rapidly increasing population makes it difficult to invest in roads, public services, drainage and other agricultural infrastructure needed to tap such resources. *Lastly*, with rapidly growing population, it becomes difficult to manage the adjustments that accompany economic and social change. Urbanisation in LDCs creates such problems as housing, power, water, transport, etc. Besides, growing population threatens permanent environmental damage through urbanisation in some rural areas.

Population and Per Capita Income. The effect of population growth on per capita income is unfavourable. The growth of population tends to retard the per capita income in three ways: (i) It increases the pressure of population on land; (ii) it leads to a rise in costs of consumption goods because of the scarcity of the co-operant factors to increase their supplies; and (iii) it leads to a decline in the accumulation of capital because with increase in family members, expenses increase. These adverse effects of population growth on per capita income operate more severely if the percentage of children in the total population is high, as is actually the case in all the LDCs of the world. Children involve economic costs in the form of time and money spent in bringing them up. But they are also a form of investment if they work during childhood as is the case with the majority of families, and if they support parents in old age which is rare in the case of majority of children. As these economic gains from having many children are uncertain, therefore a large number of children in the population entails a heavy burden on the economy, for these children simply consume and do not add to the national product. Another factor is the low expectancy of life in underdeveloped countries. It means that there are more children to support and few adults to earn thereby bringing down the per capita income. Whatever increase in national income takes place that is nullified by the increase in population. Thus the effect of population growth is to lower the per capita income.

Population and Standard of Living. Since one of the important determinants of the standard of living is the per capita income, the factors affecting per capita income in relation to population growth equally apply to the standard of living. A rapidly increasing population leads to an increased demand for food products, clothes, houses, etc. But their supplies cannot be increased in the short run due to the lack of co-operant factors, like raw materials, skilled labour, capital, etc. Consequently, their costs and prices rise which raise the cost of living of the masses. This brings down further the already low standard of living. Poverty breeds large number of children which increases poverty further.

and the vicious circle of poverty, more children and low standard of living continues.

Hirschman is, however, of the view that "population pressure on living standards will lead to counter-pressure, i.e., to activity, designed to maintain or restore the traditional standard of living of the community" which "causes an increase in its ability to control its environment and to organise itself for development."¹ Colin Clark also holds similar views when he writes that population growth "brings economic hardship to communities living by traditional methods, but it is the only force powerful enough to make such communities change their methods, and in the long run transforms them into much more advanced and productive societies."² We do not agree with the views expressed by Hirschman and Colin Clark that population pressures leading to lowering of standards will goad the people of LDCs to work hard in order to improve their standard of living. In fact, continuing rapid population growth on an already large population base means a lower quality of life for the masses. The main cost of such population growth is borne by the poor in the form of high mortality and lost opportunities for improving living standards. Thus the consequence of population growth is to lower the standard of living.

Population and Agricultural Development. In LDCs people mostly live in rural areas. Agriculture is their main occupation. So with population growth the land-man ratio is disturbed. Pressure of population on land increases because the supply of land is inelastic. It adds to disguised unemployment and reduces per capita productivity further. As the number of landless workers increases, their wages fall. Thus low per capita productivity reduces the propensity to save and invest. As a result, the use of improved techniques and other improvements on land are not possible. Capital formation in agriculture suffers and the economy is bogged down to the subsistence level. The problem of feeding the additional population becomes serious due to acute shortage of food products. These have to be imported which accentuate the balance of payments difficulties. Thus the growth of population retards agricultural development and creates a number of other problems discussed above.

Population and Employment. A rapidly increasing population plunges the economy into mass unemployment and underemployment. As population increases the proportion of workers to total population rises. But in the absence of complementary resources, it is not possible to expand jobs. The result is that with the increase in labour force,

¹A. O. Hirschman, *The Strategy of Economic Development*.

²Colin Clark, *Population Growth and Land Use*.

unemployment and underemployment increase. A rapidly increasing population reduces incomes, savings and investment. Thus capital formation is retarded and job opportunities are reduced, thereby increasing unemployment. Moreover, as the labour force increases in relation to land, capital and other resources, complementary factors available per worker decline, and as a result unemployment and underemployment increase. LDCs have a backlog of unemployment which keeps on growing with a rapidly increasing population. This tends to raise the level of unemployment manifold as compared with the actual increase in labour force.

Population and Social Infrastructure. Rapidly growing population necessitates large investments in social infrastructure and diverts resources from directly productive assets. Due to scarcity of resources, it is not possible to provide educational, health, medical, transport and housing facilities to the entire population. There is over-crowding everywhere. As a result, the quality of these services goes down. "Larger numbers mitigate against an improvement in the quality of the population as productive agents. The rapid increase in school-age population and the expanding number of labour force entrants put ever-greater pressure on educational and training facilities and retard improvement in the quality of education. Similarly, too dense a population or a rapid rate of increase of population aggravates the problem of improving the health of population." All this entails colossal investment.

Population and Labour Force. The labour force in an economy is the ratio of working population to total population. Assuming 50 years as the average life-expectancy in an underdeveloped country, the labour force is in effect the number of people in the age-group of 15-50 years. During the demographic transitional phase, the birth rate is high and the death rate is on the decline. The result is that a larger percentage of the total population is in the lower age-group of 1-15 years, and hence a smaller percentage comprises the labour force. A large percentage of children in the labour force is a heavy burden on the economy. On the other hand, a small labour force implies that comparatively there are few persons to participate in productive employment. Even if the birth rate starts declining, the labour force available for productive employment during the short run would be the same. However, the number of children would decline and this would have the effect of increasing the national income because the number of consumers would also fall. But this is only possible after the demographic transition stage is overcome which is not possible till the LDCs bring down their fertility rates. It does not mean that with their present high birth rates and low death rates, the labour force is not increasing in such countries. It simply

means that the addition to the lower age-group is larger than in the working age-group. Thus the labour force tends to increase with the increase in population. It will grow even faster, if more women seek paid employment. Since it is not possible to increase capital per worker (i.e., capital deepening) with growing labour force, each worker will produce less than before. This will reduce productivity and incomes. Wages will fall in relation to profits and rents, thereby increasing income inequalities. Besides, rapid growth in the labour force increases both open unemployment and underemployment in urban and rural areas.

Population and Capital Formation. Population growth retards capital formation. As population increases, per capita available income declines. People are required to feed more children with the same income. It means more expenditure on consumption and a further fall in the already low savings and consequently in the level of investment.

First, we study the effect of population growth on private savings. Rapid population growth adversely affects private savings by causing consumption to rise and savings per capita to fall. On the other hand, rapid population growth increases the demand for savings. In fact, it leads to "capital deepening" (i.e., spreading resources over more and more people). To maintain income, capital per person must be raised in the form of expenditure on a person's education, health and skills. So the rapid increase in population leads to the diversion of capital investments from directly productive activities to social overhead capital. The rapidly increasing population will have to be provided more basic facilities in the form of schools, roads, hospitals, water, etc., which do not add to the national product directly and immediately, with the result that the growth rate of the economy remains at a lower level. The return on capital invested is high in directly productive activities as against social overhead capital. So capital formation is adversely affected with the diversion of governmental resources from their more productive uses to current uses to provide the people for their more urgent needs. Public savings and capital formation will decline in another way as a result of a rapidly growing population. When incomes decline and consumption expenditures increase, it is difficult for the government to levy taxes on the people. Certain exemptions from taxes have to be given to people. As a result, state revenues decline which reduce investment and capital formation unless some other alternative measures are adopted by the government.

Lastly, a rapidly growing population by lowering incomes, savings and investment compels the people to use a low level technology which further retards capital formation.

Population and Environment. Rapid population growth

environmental damage. Scarcity of land due to rapidly increasing population pushes large number of people to ecologically sensitive areas such as hillsides and tropical forests. It leads to overgrazing and cutting of forests for cultivation leading to severe environmental damage. Moreover, the pressures of rapid growth of population force people to obtain more food for themselves and their livestock. As a result, they over cultivate the semi-arid areas. This leads to desertification over the long run when land stops yielding anything. Besides, rapid population growth leads to the migration of large numbers to urban areas with industrialization. This results in severe air, water and noise pollution in cities and towns.

Population and World Economy. Rapid population growth also affects the LDCs in relation to the world economy in a number of ways. *First*, rapid population growth tends to increase income disparities between LDCs and developed countries because the per capita incomes decline with growth in numbers in the former. *Second*, rapid population growth encourages international migration. But these are limited only to the Middle East countries where there is a dearth of skilled and unskilled labour. But the developed countries place restrictions on immigration because labour from poor countries adversely affects the wages of native workers and also creates social and political tensions. *Third*, emigration tends to increase wages of workers substantially at home. *Fourth*, another beneficial effect of this is that emigrants remit large sums of money back home. This increases family incomes and their living standards at home. Such families spend more on food, clothing and on modern household gadgets. Thus they lead more comfortable lives. Some repay family debts, while others invest in agricultural land and urban real estate. On their return, some enterprising persons start new ventures and others expand family-owned commercial and manufacturing businesses. Further, remittances by emigrants help finance the countries balance of payments deficit. But the LDCs are great losers because of the 'brain drain' when professional and technical workers emigrate to other countries. They subsidise the educational costs of such personnel but are unable to tax their incomes. The money they remit is insignificant as compared with the above two types of losses. Often the best of the brains are allowed to settle permanently in the employing country which is a permanent loss to the home country. *Lastly*, with rapid population growth the domestic consumption of even exportable goods increases. Consequently, there is a decline in the exportable surplus. On the other hand, to meet the demand of rapidly increasing population, more food and other consumer goods are required. It leads to an increase in imports of such goods alongwith those of capital goods needed for development. Reduction in exports and increase in imports

lead to deterioration in the balance of payments position of the country. This may force the state to curtail the importation of capital goods which will adversely affect economic development of the country.

To conclude, the consequences of a rapidly increasing population are to retard all development effort in an underdeveloped country unless accompanied by high rates of capital accumulation, and technological progress. But these counteracting factors are not available and the result is that population explosion leads to declining agricultural productivity, low per capita income, low living standards, mass unemployment, and low rate of capital formation.³

THE THEORY OF DEMOGRAPHIC TRANSITION

The theory of demographic transition or population cycle is based on the actual population trends of the advanced countries of the world. According to this theory, every country passes through five different stages of population development. According to C.P. Blacker, they are: (i) the high stationary phase marked by high fertility and mortality rates; (ii) the early expanding phase marked by high fertility and high but declining mortality; (iii) the late expanding phase with declining fertility but with mortality declining more rapidly; (iv) the low stationary phase with low fertility balanced by equally low mortality; and (v) the declining phase with low mortality, lower fertility and an excess of deaths over births. These stages are explained in the Fig. 43.1 In the figure, the time for different stages is taken on the horizontal axis and annual birth and death rates on the vertical axis.

First Stage. In this stage the country is backward and is characterised by high birth and death rates with the result that the growth rate of population is low. People mostly live in rural areas and their main occupation is agriculture which is in a state of backwardness. There are a few simple, light and small consumer goods industries. The tertiary sector consisting of transport, commerce, banking and insurance is underdeveloped. All these factors are responsible for low incomes and poverty of the masses. Large family is regarded as a necessity to augment the low family income. Children are an asset to the society and parents. The existence of the joint family system provides employment to all children in keeping with their ages. More children in a family are also regarded as an insurance against old age by the parents. People being illiterate, ignorant, superstitious and fatalists are averse to any methods of birth control. Children are regarded as God-given and

³For population control refer to *Public Health and Family Planning in the State and Economic Development*

pre-ordained. All these economic and social factors are responsible for a high birth rate in the country. Along with high birth rate, the death rate is also high due to non-nutritional food with a low caloric value, lack of medical facilities and the lack of any sense of cleanliness. People live in dirty and unhealthy surroundings in illventilated small houses. As a result, they are disease-ridden and the absence of proper medical care results in large deaths. The mortality rate is the highest among the children and the next among women of child-bearing age. Thus high birth rates and death rates remain approximately equal over time so that a static equilibrium with zero population growth prevails. This is illustrated in Fig. 43.1 (A) by the time period HS—"High Stationary" stage and by the horizontal portion of the *P* (population) curve in the lower portion of the figure.

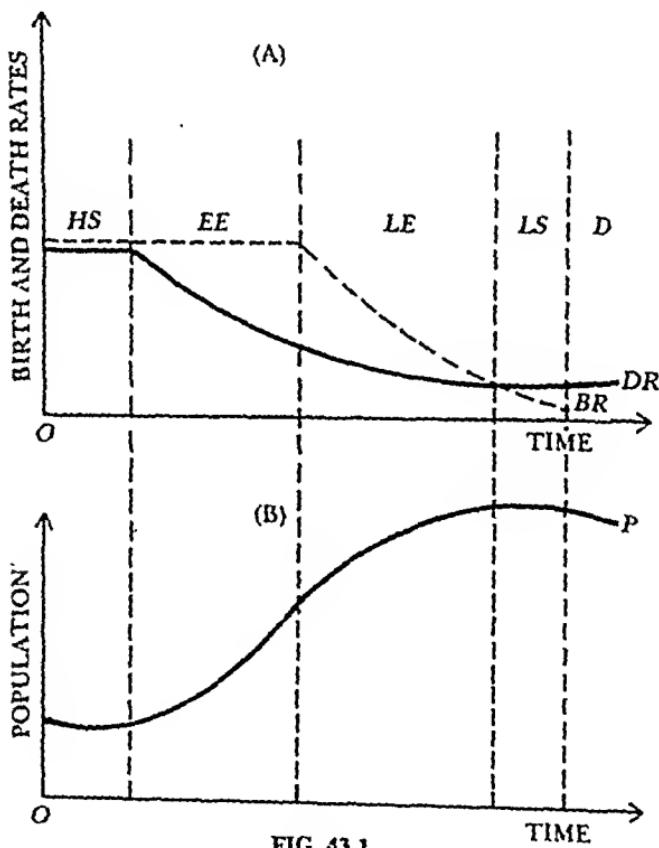


FIG. 43.1

Second Stage. In the second stage, the economy enters the phase of economic growth. Agricultural and industrial productivity increases, means of transport develop. There is greater mobility of labour. Education expands. Incomes increase. People get more and better quality food products. Medical and health facilities are expanded.

Modern drugs are used by the people. All these factors bring down the death rate. But the birth rate is almost stable. People do not have any inclination to reduce the birth of children because with economic growth employment opportunities increase and children are able to add more to the family income. With improvements in the standard of living and the dietary habits of the people, the life expectancy also increases. People do not make any efforts to control the size of family because of the presence of religious dogmas and social taboos towards family planning. Of all the factors in economic growth it is difficult to break with the past social institutions, customs and beliefs. As a result of these factors, the birth rate remains at the previous high level. With the decline in the death rate and no change in the birth rate, population increases at a rapid rate. This leads to population explosion. This is an "Early Expanding" (EE) stage in population development when population grows at an increasing rate, as shown in Fig. 43.1(B), with the decline in death rate and no change in birth rate, as shown in the upper portion of the figure.

Third Stage. This is the "Late Expanding" (LE) stage of population development. In this stage, declining birth rates accompanied by death rates declining more rapidly. As a result, population grows a diminishing rate, as shown in the figure.

Fourth Stage. In this stage, the fertility rate declines and tends to equal the death rate so that the growth rate of population declines. As growth gains momentum and people cross the subsistence level of income, their standard of living rises. The leading growth sectors expand and lead to an expansion in output in other sectors through technical transformations. Education expands and permeates the entire society. People discard old customs, dogmas and beliefs, develop individualistic spirit and break with the joint family. Men and women prefer to marry late. The desire to have more children to supplement parental income declines. People readily adopt family planning devices. They prefer to go in for a baby car rather than a baby. Moreover, increased specialisation following rising income levels and the consequent social and economic mobility make it costly and inconvenient to rear a large number of children. All this tends to reduce the birth rate which along with an already low death rate brings a decline in the growth rate of population. The advanced countries of the world are passing through this "Lower Stationary" (LS) stage of population development, as shown in the figure. Population growth is curtailed and there is zero population growth.

Fifth Stage. A continuing decline in birth rates when it is not possible to lower death rates further, in the advanced countries leads to a "declining" (D) stage of population. The existence of this s

developed country is a matter of speculation.

Conclusion. The theory of demographic transition is the most acceptable theory of population growth. It does not lay emphasis on food supply like the Malthusian theory, nor does it develop a pessimistic outlook towards population growth. It is also superior to the optimum theory which lays an exclusive emphasis on the increase in per capita income for the growth of population and neglects the other factors which influence it. The biological theories are also one-sided because they study the problem of population growth simply from the biological angle. The demographic transition theory is superior to all the theories of population because it is based on the actual population growth trends of the developed countries of Europe. Almost all the European countries have passed through the first three stages of this theory and are now in the fourth stage. Not only this, this theory is equally applicable to the developing countries of the world. Very backward countries in some of the African states are still in the first stage whereas the other developing countries are either in the second or in the third stage. It is on the basis of this theory that economists have developed economic-demographic models so that developing countries should enter the fourth stage and attain the stage of self-sustained growth. One such model is the Coale-Hoover model for India which has also been extended to other developing countries. Thus this theory has universal applicability.

Chapter 44

HUMAN CAPITAL FORMATION AND MANPOWER PLANNING

MEANING AND IMPORTANCE OF HUMAN CAPITAL FORMATION

The term human capital formation refers to the "process of acquiring and increasing the number of persons who have the skills, education and experience which are critical for the economic and the political development of a country. Human capital formation is thus associated with investment in man and his development as a creative and productive resource."¹ According to Schultz, there are five ways of developing human resources: "(i) health facilities and services, broadly conceived to include all expenditures that affect the life expectancy, strength and stamina, and the vigour and vitality of the people; (ii) on-the-job training, including old type apprenticeships organised by firms; (iii) formally organised education at the elementary, secondary and higher levels; (iv) study programmes for adults that are not organised by firms, including extension programmes notably in agriculture; (v) migration of individuals and families to adjust to changing job opportunities."² To this list may be added the import of technical assistance, expertise and consultants. In its wider sense, investment in human capital means expenditure on health, education and social services in general; and in its narrower sense, it implies expenditure on education and training. It has become conventional to talk about investment in human resources in its narrower sense because expenditure on education and training is capable of measurement as compared to the expenditure on social services.

The notion of investment in human capital is of recent origin. In the process of economic growth, it is customary to attach more importance to the accumulation of physical capital. Now it is increasingly recognised that the growth of tangible capital stock depends to a considerable extent on human capital formation which is the "process of increasing knowledge, the skills and the capacities of all people of the country."³

¹This also relates to *Human-Resource Development*

²F.H. Harbison, 'Human Resources in Development Planning in Modernising Economies,' *ILR*, May 1962.

³T.W. Schultz, 'Investment in Human Capital,' *AER*, March 1961

⁴F.H. Harbison and C.A. Meyers, *Education, Manpower and Economic C*

Studies made by Schultz, Harbison, Dension, Kendrick, Abramovitz, Becker, Bowman, Kuznets and a host of other economists reveal that one of the important factors responsible for the rapid growth of the American economy has been the relatively increasing outlays on education. They tell us that a dollar invested on education brings a greater increase in national income than a dollar spent on dams, roads, factories or other tangible capital goods. In Galbraith's words, "We now get the larger part of our industrial growth not from more capital investment but from investment in men and improvements brought about by improved men." Even earlier economists like Adam Smith, Veblen and Marshall stressed the importance of human capital in production. Adam Smith included in a country's stock of fixed capital 'the acquired and useful abilities of all the inhabitants.' To Veblen technological knowledge and skills formed the community's 'immaterial equipment or intangible assets' without which physical capital could not be utilized productively. Marshall regarded education "as a national investment "and" the most valuable of all capital is that invested in human beings." Economists are, therefore, of the view that it is the lack of investment in human capital that has been responsible for the slow growth of the LDCs. Unless such economies spread education, knowledge, and know-how, and raise the level of skills and physical efficiency of the people, the productivity of physical capital is reduced.

Underdeveloped countries are faced with two diverse manpower problems. They lack the critical skills needed for the industrial sector and have a surplus labour force. The existence of surplus labour is to a considerable extent due to the shortage of critical skills. So these diverse problems are interrelated. Human capital formation aims at solving these problems by creating the necessary skills in man as a productive resource and providing him gainful employment.

The need for investment in human capital formation in such economies is more obvious from the fact that despite the massive imports of physical capital they have not been able to accelerate their growth rates because of the existence of undeveloped human resources. Of course, some growth is possible from the increase in the conventional capital even though the available labour force is lacking in skills and knowledge. But the growth rate will be seriously limited without the latter. Human capital is, therefore, "needed to staff new and expanding government services, to introduce new system of land use and new methods of agriculture, to develop new means of communication, to carry forward industrialization, and to build the educational system. In other words, innovation or the process of change from static or traditional society, requires very large doses of strategic human capital."

Physical capital becomes more productive if the country possesses

sufficient human capital. Underdeveloped countries are strongly committed to the programmes of constructing roads, dams, power houses, factories pertaining to light and heavy industries, hospitals, schools, colleges, and a host of other activities associated with development planning. For this, they need engineers, technicians, technical supervisors, managerial and administrative personnel, scientists, doctors, nurses, veterinarians, agronomists, accountants, statisticians, economists, secretaries, stenographers, etc. If there is a dearth of this varied type of human capital, physical capital cannot be productively utilized. As a result, machines break down and wear out soon, materials and components are wasted and the quality of production falls.

Moreover, underdeveloped countries import physical capital for development but they are unable to utilise it fully due to the lack of the "critical skills" required for its operation. Though technical know-how and skills usually come with foreign capital, yet it is insufficient to meet the diverse and varied requirements of such economies. Thus the failure of human capital to grow at the rate of physical capital has been responsible for the low absorptive capacity of the latter in underdeveloped countries. Hence the need for investment in human capital becomes of paramount importance in such countries.

LDCs are characterized by economic backwardness which manifests itself in "low labour efficiency, factor immobility, limited specialisation in occupations and in trade, a deficient supply of entrepreneurship and customary values and traditional social institutions that minimise the incentives for economic change. The slow growth in knowledge is an especially severe restraint on progress. The economic quality of the population remains low when there is little knowledge of what natural resources are available, the alternative production techniques that are possible, the necessary skills, the existing market conditions and opportunities, and the institutions that might be created to favour economising effort and economic rationality." To remove economic backwardness and instill the capacities and motivations to progress, it is necessary to increase the knowledge and skills of the people. In fact, without an improvement in the quality of human factor no progress is possible in an underdeveloped country. As aptly emphasized by Schultz, "It is as if we had a map of resources which did not include a mighty river and its tributaries. The particular river is fed by schooling, learning on-the-job, advances in health, and the growing stock of information of the economy."

Investment in human capital is also required to raise the general living standards of the people in LDCs. This is possible when education and training make fuller and rational utilisation of surplus manpower by providing larger and better job opportunities in both rural and urban

reas. These, in turn, raise incomes and living standards of the people.

Problems of Human Capital Formation

The concept of human capital formation in the context of investment in education poses a number of problems. How much is the total stock of human capital required? At what stage of development is it needed the most? What should be its rate of accumulation? What type of education should be imparted, to what extent, and at what time? And how should the return from educational investment be measured?

It is difficult to assess the *total stock* of human capital required in an underdeveloped country. In fact, this problem is associated with the next one, of determining the *stage* when it is needed the most. The growth of western European countries and the USA has been based more on investment in physical capital than in human capital in their earlier phases of development. But in the case of underdeveloped countries the need for human capital in the form of educated persons in different vocations is greater to provide the missing components in the initial stages of their development. As they install complex equipment and methods of production, persons with critical skills are more important than mere arts graduates. There is greater need for entrepreneurs, business executives, administrators, scientists, engineers, doctors, etc. But it is difficult to increase their supply because "their basic function is to change the economic organisation of the country in more productive directions instead of being fitted into a given framework."

It is not possible to spell out in concrete terms the *growth rate* of human capital formation, as is commonly the case with physical capital accumulation. However, it can be said in general terms that the rate of accumulation of human capital should exceed not only the growth rate of labour force but also the growth rate of economy. According to Harbison, in most countries the rate of increase in scientific and engineering personnel should be at least three times that of the labour force, and at least twice in the case of clerical personnel, craftsmen, top managerial and administrative personnel. On the other hand, the ratio of the annual increase in human capital to the annual increase in the national income may be as high as three to one, or even higher in the case of those countries where foreigners are to be replaced by citizens of the developing countries. But there is no empirical evidence to prove the different growth rates of human capital needed by underdeveloped countries at the various stages of development.

So far as the *pattern* of investment in education is concerned, almost

*T.W. Schultz, 'Reflection on Investment in Man', *JPE*, October 1962.

all the underdeveloped countries of Asia, Africa and Latin America accord a high priority to primary education which is often free and compulsory. But it leads to considerable wastage and stagnation and puts a severe strain on the physical facilities and teaching personnel of educational institutions. Secondary education is, on the other hand, accorded a low priority. It is, however, people with secondary education who provide the critical skills needed the most for economic development. Emphasizing the importance of secondary education, Lewis regards persons with a secondary education as "the officers and non-commissioned officers of an economic and a social system. A small percentage goes on to university education, but the numbers required from the university are so small that the average country of up to five million inhabitants could manage tolerably well without a university of its own.... The middle and upper ranks of business consist almost entirely of secondary school products, and these products are also the backbone of public administration."⁵ But LDCs lay more emphasis in providing primary education on a mass scale.

Underdeveloped countries in their enthusiasm to spread higher education have been opening too many universities without trying to improve the standard of education. No restrictions are placed on higher education with the result that the proportion of failures at the higher secondary and university levels is very high. Mass failures and the general lowering of academic standards tend to lower the efficiency of undergraduates and "graduates employed both in the private and the public sector do not promise well for the formation of a dynamic leadership for economic development." This leads to wastage of human resources.

Moreover, there being little manpower planning in such economies, no efforts are made to match the demand and supply of different types of critical skills. As a result, "few countries can go on absorbing poorly trained university graduates at a faster rate than their general economic growth. Sooner or later with their present pattern of educational expansion, many developing countries will have to contend with one of the most explosive problems of discontent and frustration, that of graduate unemployment." Considering the high cost of education, the educated unemployed are a huge waste of human and material resources. Besides the defective educational system, other factors responsible for this are the lack of employment bureaux, low wage and salary structure, unwillingness to accept a job in rural areas or one considered below the occupational hierarchy or status, and drop outs.

Further, insufficient attention is paid to agricultural education, adult

education and on-the-job training programmes in such countries. There are no on-the-job training programmes. Little is done in the field of adult education and in educating the farmers to use modern agricultural practices. Adult education helps in changing the outlook of the farmers, sharpens their decision-making skills and provides them necessary information with regard to modern agricultural practices. But these educational and training programmes require a large number of teachers and instructors which the LDCs woefully lack.

Another problem of investment in human capital is that politicians and administrators consider it more in terms of providing buildings and equipment than the teaching staff. In fact, the real bottleneck to the formation of human capital in LDCs is the supply of qualified instructors and teachers.

Criteria for Investment in Human Capital

One of the most ticklish problems is that of estimating the productivity of investment in human capital formation, especially in education. Economists have suggested the following criteria.⁶

1. The Rate of Return Criterion. Education as an investment has two components: future consumption component and future earnings component. Investment in skills and knowledge increases future earnings, while the satisfaction derived from education is the consumption component. "As an enduring consumer component, *education* is the source of future utilities which in no way enters into measured national income."⁷ Thus in calculating the return on investment in education, future earnings component is considered discounted for interest to measure their present value. The method used is based on a comparison of the average life time earnings of more educated persons with that of persons with less education employed in similar professions. For example, Becker estimated that the rate of return on total investment on college education in the USA for white urban males was 12.5 per cent in 1940 and 10 per cent in 1950. It was, however, 9 per cent after deducting taxes for both 1940 and 1950.⁸ This estimate included direct cost to the student, earnings forgone during the period of studies, and college's share of the cost.

⁶We have not discussed the Cost-Benefit Criterion. For this, refer to the chapter on Project Evaluation. Prof. G.M. Meier observes in this connection: "Any cost-benefit analysis of the "returns" to education must incorporate the interactions between education and the economy giving particular attention to education as an investment, the importance of rural education in a developing economy, and the interdependence between education, manpower requirements and development." (*Leading Issues in Economic Development*, 1976).

⁷T.W. Schultz, *op. cit.*

⁸G.S. Becker, 'Under Investment in College Education, AER,' May 1960.

Its Difficulties. Such estimates involve several difficulties. *First*, they measure only the direct material benefit and exclude altogether the external economies of education—the direct and indirect benefits accruing to the country from improvements in the levels of the people. *Second*, this criterion is based on a number of arbitrary assumptions such as the person's income during his life time, the earnings from different occupations, future wage rates and future employment, levels. *Third*, the decisions to invest in education and training are not governed by the rate of return criterion alone but by social welfare. *Fourth*, what people earn is not exclusively due to university education, rather it is the result of natural ability, experience, social status, family connection, on-the-job training, etc. *Fifth*, such estimates measure only private rates of return on investment in education. They indirectly measure the effects of education on the output of the country by assuming that differences in earnings reflect differences in productivity. But collective efforts by various groups (such as doctors, manual workers, teachers, and engineers through trade unions) and other factors may distort relative earnings in the economy. Moreover, private rates of return cannot be evaluated where the costs of running the school are negligible as is the case of a single teacher school being run without any fee in many Indian villages. *Sixth*, returns from investment in creating skills and knowledge do not increase incomes of the individuals concerned but the total productive capacity of the economy. *Seventh*, according to Eckaus, prices of educated labour used in the estimation of rate of return must reflect the relative scarcities of factors involved. But where the major part of investment costs on education are borne by the government, prices of educated labour do not reflect scarcities of factor inputs determined in competitive markets. Moreover, this criterion fails to provide the information on "how much" and "what kind" of additional education is required for economic development.⁹ *Last*, as observed by Bowen, the difficulties involved in identifying earnings differentials with productivity differentials force to be somewhat more cautious in drawing sweeping conclusions as to the effects of education on national output.¹⁰

2. The Criterion of Contribution of Education to Gross National Income. According to this criterion, investment on education is determined by its contribution to increase in gross national income or physical capital formation over a period of time. Schultz analysed the contribution of education to growth in national income in the US from 1900 to 1956, and came to the conclusion that the resources allocated to

⁹R.S. Eckaus, 'Economic Criterion for Education and Training,' RES, May 1964

¹⁰W.G. Bowen, *Economic Aspects of Education*, 1964

education rose about 6.5 times: (a) relative to consumer income in dollars; (b) relative to the gross formation of physical capital in dollars. In other words, the income elasticity of the demand for education was about 3.5 times over the period, and alternatively, investment in education contributed 3.5 times more to the increase in gross national income than investment in physical capital.¹¹ Schultz has also calculated the total stock of educational capital at different points in time. He added together the possible earned income forgone (or the opportunity cost) by those enrolled in schools, colleges, and universities and the expenditures for formal education of all types with allowance for depreciation. The total stock of educational capital in the labour force of the US rose from dollars 63 billion in 1900 to dollars 535 billion in 1957, and the ratio of the stock of educational capital to the stock of physical capital rose from 22 per cent in 1900 to 42 per cent in 1957.¹²

Similar estimates have been made by P.R. Panchmukhi in India following Schultz's method. His estimates of educational capital reveal that the total cost of formal education in India rose from Rs 341 crores in 1950-51 to Rs 769 crores in 1959-60.¹³

Its Evaluation. These estimates are more realistic than the estimates of returns on education as they measure the impact of educational investments on the economy. They are based on the opportunity cost of education which means foregone incomes of students while in schools, colleges and universities, and expenditure incurred on formal education after making due allowance for depreciation. But the calculation of foregone incomes is not so simple and poses a number of problems. Are these to be estimated from the present earnings of persons in the same age group who never went to school? This is the case in underdeveloped countries where the majority of young persons have no schooling but they earn in family vocations. Thus the real cost of education may be a consequence of foregone earnings while attending the school. Moreover, there being widespread unemployment, wages as foregone earnings cannot measure the impact of educational investments on national income accurately. Under such circumstances, the estimation of foregone earnings becomes arbitrary as the increased supply of labour tends to be lower than the actual earnings. Again, social costs are also an important factor. For, the cost involved in having potential members of labour force to go to school rather than to work is not only a private cost to the students or their families but also a social cost; a potential

¹¹T.W. Schultz, 'Capital Formation by Education,' *JPE*, December 1960.

¹²T.W. Schultz, *Education and Economic Growth in Social Forces Influencing American Education*, N.B. Henry (ed.) 1961.

¹³P.R. Panchmukhi, 'Educational Capital in India,' *IJE*, January-March 1965.

addition to national product remains unrealized. To Balogh¹⁴ calculations made about the profitability of education are not merely fallacious in a technical economic sense but immoral politically.

3. **The Residual Factor Criterion.** Solow, Kendrick, Denison, Jorgenson and Griliches, Kuznets,¹⁵ and other economists have tried to measure what proportion of the increase in the GNP, over a period of time, could be attributed to the measurable inputs of capital and labour, and what proportion of the increase in the GNP could be ascribed to other factors, frequently grouped as 'residual'. The most important of these residual factors are education, research, training, the economies of scale and other factors affecting human productivity. Denison's estimates for the United States for 1929-57 reveal that the contribution of education to the growth of total real national income was 23 per cent. So far as the contribution of the "residual" factor is concerned, it accounted for 31 per cent of total growth of national income. This was due to the impact of the advance of knowledge (20 per cent) and the economies of scale resulting from the growth of national markets (11 per cent). On the other hand, Solow in his study of the United States for the period 1909-49 attributed 90 per cent of the average growth rate of output per head to the "residual factor," falling under the general heading of technical change.

Its Criticism. The residual factor criterion is not free from certain weaknesses. *First*, the residual factor has been used as a much wider term which includes such varied factors as the economies of scale, technical change, besides education research and training. These factors make the criterion complex. *Second*, the residual factor may also include some improvements in capital assets which may, of course, be attributed to improvements in human knowledge and skills. *Third*, this criterion does not make any distinction between formal and informal education, or in the quality or content of education. *Fourth*, Jorgenson and Griliches in their study reveal that the "residual" which Denison attributes to 'advance in knowledge' is small and not large. The fact that the residual is small indicates that the contribution of investment to economic growth is largely compensated by the private returns to investment. *Fifth*, in their study of the U.S. economy for 1945-65, Jorgenson and Griliches find virtually no "residual" to explain after

¹⁴T. Balogh, 'The Economics of Educational Planning,' *Comparative Education*, October 1964.

¹⁵R M Solow, 'Technical Change and the Aggregate Production Function,' *R E & S*,

making corrections for aggregation errors for capital, labour, prices, etc. After making adjustments for such errors, the contribution of residual is reduced to 0.1 per cent per year. Sixth, the "residual" criterion is based on the production function which is characterised by constant returns to scale. In reality, a developed economy is subject to increasing returns. As a result, more of the growth of output would be credited to the increase of physical inputs and less to the increase in the "residual factor." Last but not the least, capital's contribution to economic growth has been underestimated in the residual criterion. If the resource put into the advance in knowledge were counted as investment and the capital stock were so defined as to include this type of investment, more of the growth rate would be attributed to the increase of the capital stock and less would be left in the residuary category of increases in knowledge, skills, training, etc. Thus the residual criterion has not received enough support from economists.

4. The Composite Index Criterion. Harbison and Myers¹⁶ have developed a composite index criterion of human resource development on the basis of certain human resource indicators. The composite index is used as the basis for ranking seventy-five countries and grouping them into four levels of human resource development, namely, underdeveloped, partially developed, semi-advanced and advanced. Then they have attempted to study the relationships between these indicators and indicators of economic development.

They have described the following indicators of human resource development: (1) Number of first and second level teachers per 10,000 population. (2) Engineers and scientists per 10,000 population. (3) Physicians and dentists per 10,000 population. (4) Pupils enrolled at first (primary) level of education as a percentage of the estimated population aged 5 to 14 inclusive. (5) The adjusted school enrollment ratios for first and second levels combined. (6) Pupils enrolled at second (secondary) level of education as a percentage of the estimated population aged 15 to 19 inclusive, adjusted for length of schooling. (7) Enrollment in third (higher) level of education as a percentage of the age group 20 to 24. (8) The percentage of students enrolled in scientific and technical faculties in a recent year. (9) The percentage of students enrolled in faculties of humanities, fine arts, and law in the same year.

The first three indicators are partial measures of the stock of human resources and the next four are measures of additions to the stock.

After a number of trials with some of the indicators, Harbison and Myers have developed a composite index to rank seventy five countries according to four levels of human resource development. The composite

¹⁶Op. cit., Chapters 3-7.

index is simply the arithmetic total of (1) enrollment at second level of education as a percentage of the age group 15 to 19, adjusted for length of schooling, and (2) enrollment at the third level of education as a percentage of the age group, multiplied by a weight of 5. In their opinion, higher education should be weighted more heavily than second-level in such an index.

For statistical analysis, they take indicators of economic development: (1) GNP per capita in US dollars, and (2) the percentage of the active population engaged in agricultural occupations. Besides, they have used two more indicators: (a) public expenditures on education as a percentage of national income, and (b) the percentage of the total population in the age group 5 to 14, inclusive.

Herbison and Myer's study shows a close association between enrollment ratios at all levels of education and GNP per capita. The highest correlation coefficient (0.888) is found between GNP per capita in US dollars and the composite index of human resource development which is a combination of second-level and third-level enrollment ratios.

Its Criticism. The composite index is a useful criterion to measure the role of different levels of education in formulating an education policy geared to the economic development of LDCs. It expresses quantitative relationships between indicators of human resource development and indicators of economic development. But these relationships do not establish quantitative relationships. Further the composite index does not reflect the influence of other factors such as rich natural resources or less population level which may lead to higher GNP per capita.

Conclusion. Whatever the difficulties associated with the problem of investment in human capital, it is now fully recognised that the growth of LDC is held back not by the shortage of physical capital as by the shortage of critical skills and knowledge which in turn limit the capacity of the economy to absorb the available physical capital stock. Thus human capital formation is regarded even more important than material capital formation.

MANPOWER PLANNING IN LDCs

Manpower planning relates to the long-range development of semi-skilled and skilled manpower requirements of the economy, and to plan educational priorities and investments in human resource development so as to enlarge employment opportunities in the future.

The general approach to manpower planning in LDCs three-fold. *first*, to identify the skilled manpower shortages in each sector of the economy and reasons thereof; *second*, to identify the manpower surpluses in both the modernising and traditional sectors and

reasons for such surpluses; and third, to lay down a strategy for manpower planning. We discuss these aspects of manpower planning as under.

Manpower Shortages

The Manpower shortages in LDCs fall into several categories:

1. Current Shortages. There is a shortage of *highly educated* professional manpower in all LDCs. Such manpower includes scientists, engineers, doctors, agronomists and veterinarians. They live in cities and do not like to move to rural areas where their services are needed the most. Thus their shortage is increased by their relative immobility.

The shortage of *sub-professional* manpower is even more acute than the professional manpower. Such manpower includes civil, mechanical, electrical, chemical, metallurgical and agricultural technicians; foremen, spinning, weaving and finishing masters; nurses, compounders, midwives and health assistants, etc. Some of the reasons for their shortages are (a) the failure to recognise on the part of LDCs that the requirements for such sub-professional manpower are many times higher than for professional personnel; (b) the few persons who are qualified to enter a technical institute prefer to enter a university because the holder of a university degree has a higher status and pay; and (c) the seats available in the technical institutes are very few as compared to the universities.

Shortages also exist at the *top-level managerial and administrative personnel* in both the private and public sectors. Such shortages exist in respect of general managers, production managers, sales managers, works managers, cost accountants and company secretaries. There is also the shortage of persons with entrepreneurial abilities.

There are shortages of trained primary, secondary and craft teachers and instructors because of their low salaries. They tend to leave the technical profession as and when they find more attractive jobs in other professions. The shortage of science and mathematics teachers is particularly acute in secondary schools.

At the skilled workers level, there are shortages of *craftsmen and technical clerical personnel*. In the former category are included tool-makers, fitters, machine-tool operators, welders, moulders, electricians, blacksmiths, painters, motor mechanics, etc. The shortages of technical clerical personnel relate to typists, stenographers, bookkeepers, and business machine operators.

Besides, there is a dearth of several *miscellaneous categories* of personnel in LDCs, such as, accountants, statisticians, economists, radio and television specialists, and airplane pilots.

form of unfulfilled jobs in LDCs despite widespread unemployment and underemployment. In the majority of establishments persons with the requisite skills are not available. As a result, a number of posts remain vacant. But to carry out such jobs, the concerned establishments employ persons not possessing the required education and training for such jobs. This affects adversely productivity and production of such establishments.

3. Frictional Shortages. The LDCs also experience frictional manpower shortages due to the lack of an organised employment market, increase in the sudden demand for manpower in labour shortage regions, and immobility of labour. For example, agricultural transformation and urbanisation has created such shortages in Punjab.

4. Replacement of Foreign Personnel. There are current manpower shortages of highly skilled manpower at the top level in the LDCs of Africa and the Gulf countries due to the replacement of foreign personnel. "The strategic technical positions in the public services, the top positions in private industry and commerce, and most of the higher positions in education are of necessity, held by non-indigenous personnel." With the gradual withdrawal of foreign personnel in the wake of nationalisation manpower shortages are likely to increase further in the oil refineries, the mines, the plantations, the big commercial establishments, the factories, the banks, the universities, the hospitals, the power plants, etc. in such countries.

Manpower Surpluses

Manpower surpluses relate to both unskilled and skilled workers available for and in search of gainful employment. The manpower surpluses in LDCs consist of the following categories.

1. The Underemployed include both open and disguised unemployed. Open underemployed are those who are working less than the normal hours. Disguised unemployed are those whose contribution to output is less than what they can produce by working for normal hours of work per day. Both these forms of underemployment exist in rural and urban areas in the LDCs. In rural areas the underemployed include the landless agricultural workers, marginal farmers, peasants, artisans, craftsmen and self-employed persons. They are the result of backward agricultural methods and feudal systems of land tenure. In urban areas, they include hawkers, petty traders, workers in service and repair shops, porters, shoeshines, etc. who are not qualified for medium and higher skilled jobs.

The unemployment estimates under this category are available only on the basis of NSS Rounds in a number of developing countries like India. They are based on usual status, weekly status and daily status.

which bring out the chronic, seasonal and part time unemployment and underemployment respectively. The weekly and daily status represent the average numbers of persons unemployed per week and per day respectively during the survey period. On these bases, some economists estimate the number of underemployed to be as high as 50 to 80 per cent of the potential labour force in the LDCs.

2. The Educated Unemployed and Underemployed also reflect the surplus manpower in LDCs. The educated manpower refers to those persons who have obtained at least a matric/secondary certificate. In the LDCs, the demand for education is high because the private cost of education is low and a higher level of education is associated with better job opportunities, higher level of income and better status. Since technical education is relatively costly and restricted, more persons in the younger group are attracted towards higher education in colleges and universities. But with their formal education they are neither able to get jobs nor are fit for self-employment. Structural rigidities and slow rate of growth have failed to increase job opportunities for them. Consequently, the educated manpower has been on the increase. Further, there is underemployment among the educated who take up jobs below the skill levels they have obtained through education and training.

3. Urban Unemployed and Underemployed. Besides the surplus educated and uneducated manpower already existing in urban and rural areas of LDCs, urban unemployed and underemployed are on the increase with development. The rapid increase in population, over-crowding on the land, the seasonal nature of agricultural operations, the spread of education in rural areas and the building of roads and the establishment of new industries in urban areas are encouraging migration of people to towns and cities. But the industrial sector has failed to absorb the growth of labour force thereby increasing urban unemployment and underemployment.

Strategy for Manpower Planning¹⁷

Harbison points toward a three-pronged strategy for human resource development to overcome the manpower shortages and surpluses in LDCs. The essential components of such a strategy are: (1) the building of appropriate incentives; (2) the effective training of employed manpower, and (3) the national development of formal education. These three elements of manpower strategy are interdependent and

¹⁷This also relates to the Strategy for Human Resource Development.

progress in one is dependent upon progress in the other two. Therefore, LDCs should plan an integrated attack on all three fronts simultaneously.

1. Building of Incentives. In the LDCs, people should be encouraged to engage in such productive activities which are needed to accelerate the process of economic development. Since all skills are critically scarce, scientists, engineers, doctors, managerial and administrative personnel, etc. should be encouraged and given due status. In the majority of LDCs due recognition in the form of good salary and high social status is not given to persons possessing such critical skills. Often political pressures, caste, creed and regionalism result in a tragic waste of precious talent, low morale and undermining of efficiency. Some of the more ambitious, having resources migrate to the advanced countries for better opportunities. To avoid the brain drain, the LDCs should build appropriate incentives within the country. This equally applies to teachers, technicians, nurses, agronomists and other semi-professional groups.

"The building of incentives is crucial for both the accumulation and investment of human capital. In fact, investments in education may be wasted unless men and women have the will to prepare for and engage in those activities which are needed for accelerated growth." Moreover, the market mechanism should be made more effective for the optimum allocation of manpower.

2. Training of Employed Manpower. The second important plank for the strategy of human resource development is to upgrade the qualifications and improving the performance of employed manpower in strategic occupations. For this purpose, efforts should be made to develop management-training programmes, supervisory-training courses, productivity centres, institutes of public administration, etc. To meet the expanding manpower needs of firms, on-the-job training and apprenticeship programmes should be started. Universities and vocational institutes can start part-time extension and evening classes. The greatest need is for massive agricultural extension services and rural community reorganisation and development programmes for the transformation of traditional agriculture and rural life. These require the training of local youngmen as village-level and extension workers so that the farmers are provided basic education in rural development and their skills are upgraded. But these measures are dependent upon basic programmes of land reform.

3. Development of Formal Education. The third component of the strategy for manpower planning is the building of the system of formal education. "In planning the development of formal education, the LDCs are faced with difficult choices. Since education of all kinds is

under-developed, it would be desirable to expand it rapidly at every level. A strong case could be made for a crash programme to extend and improve primary education. Secondary education is, of course, the most critical bottleneck in providing new additions to the desperately short supply of high-level manpower of all kinds. Expansion of higher education is indispensable if foreigners are to be replaced by local nationals."

So far as the primary education is concerned, the emphasis should be not only on increasing the number of pupils enrolled but also on improving the quality of education by employing qualified teachers. The major effort should be to apply new techniques of education such as visual aids, instruction by radio and television, appropriate texts and simplified curricula.

But the expenditure on primary education should be given a lower priority than secondary and higher education. To keep capital costs of primary education within limits, emphasis should be on improving teaching personnel and developing better educational techniques. Further economy can be made by avoiding expenditure on school buildings. The local villagers should be asked to construct them with local labour and materials.

The LDCs should give top priority to secondary education because it is the secondary-level educated persons who are needed at all levels in government industry, commerce and agriculture. They are also required to replace foreigners and to meet the vast manpower requirements of a growing economy. The purpose of secondary education should be broadbased to provide education in science, mathematics, arts and humanities so that students may take jobs directly, or become technicians, or school teachers, or enter the universities. Therefore, the emphasis should be on multipurpose secondary schools. In the area of higher education, the strategy stresses the need for investing in such sub-professional as personnel as agricultural and engineering assistants secondary school teachers, nurses, medical technicians, typists, stenographers, mechanics of various categories, etc. For their education and training, polytechnic and other technical institutions should be established by encouraging private enterprise. This is because technical education costs four to six times as much per student as non-technical education.

So far as the university-level education is concerned, the agricultural scientific, medical, and engineering faculties should be expanded; while that of arts, humanities and law should be limited. Research institutes in natural and biological sciences, engineering and agriculture should be established to increase the country's capability of modern science and technology to its own needs.

Since higher education is costly, emphasis should be on low-cost buildings, utilising fully the existing plant and equipment, and other economy measures without lowering standards.

Another element in the strategy for formal education is *adult education*. The programme of formal adult education should include "agricultural and cooperative extension work, fundamental education and other organised programmes to enable men and women to participate more effectively in their country's economic development." Investment in adult education is time-saving and cost-reducing and provides more lucrative returns than any other kind of educational investment.

Conclusion. The three elements of human resource development discussed above should form part of a country's development programme. To solve the problem of surplus manpower requires check over rapidly increasing population, removal of market imperfections, effective government organisations, private enterprises, agricultural extension forces, research institutions, producer and consumer cooperatives, education systems, and a host of other institutions which mobilise and direct human energy into useful channels."

Estimating Future Manpower Requirements*

The estimation of future manpower requirements is the most difficult task for planners and policy makers. At the same time, it is an indispensable step in planning for the future manpower requirements of the economy, for the building of educational and training institutions and to estimate the costs involved therein. Since the development of manpower is a long-term process, the country's requirements must be estimated for one or two decades in advance. This is because it takes a very long time "to build schools, to train teachers, and to fill the educational pipe lines in primary and secondary schools in order to expand the number of university graduates." There are a number of methods to estimate future manpower requirements but we discuss a few important ones.

1. **Manpower Requirements Approach.** Backerman and Pearce have developed the "the manpower requirements approach to ~~education~~ planning." It attempts to define educational needs in terms of productivity and a given pattern of economic growth. This involves the following steps. (a) The analysis of the ~~existing~~ ~~sector~~

*This section draws heavily on F. Backerman and C.A. Pearce, op. cit.

structure is made by (1) preparing an inventory of employment and short-term requirements for manpower for each major sector of the economy; (2) a general appraisal of the educational system; (3) a survey of programmes for on-the-job training; and (4) an analysis of the structure of incentives and proper utilisation of present manpower.

(b) On the basis of an economic plan, the patterns of output for the various sectors of the economy are projected for the forecast year. Then total employment for each sector and the economy is estimated on the basis of some assumptions about productivity.

(c) The total employment for the forecast year is allocated among the various occupations for each sector according to the occupational classification system chosen. Then the requirements for each occupational category are aggregated from the various sectors to arrive at the total manpower-stocks required in the forecast year. In these estimates, allowance is made for the effects of increases in productivity on the occupational structure.

(d) The supply of manpower with each minor type of educational qualification is estimated for the forecast year on the basis of present stocks of manpower, anticipated outflows from the existing educational system as presently planned, and allowances for losses due to death, retirement, and other reasons for withdrawal from the labour force.

(e) The estimated outputs on manpower from the educational system are compared with the required manpower outputs as determined in the above step (d).

(f) The orders of magnitude for expansion of the educational system are then established to close the gap between anticipated manpower requirements and presently expected manpower supply.

This method has been used with slight modifications by Turkey, Greece, Yugoslavia, Italy, Spain and Portugal. It links manpower requirements to productivity and is designed to identify manpower difficulties which could hamper production.

Its Weaknesses. But this approach has certain weaknesses. The productivity criterion is not so useful in estimating manpower requirements in agriculture where it is not possible to estimate future employment by forecasting about productivity in especially in countries having massive disguised unemployment. The LDCs "lack empirical data on which to base estimates of expected increases in productivity and the bearing of these on changes in occupational requirements." Another difficulty relates to "the determination of required educational qualifications of high-level occupations for the forecast year. To a large extent, they may depend upon the supply structure of educated persons at that time." Lastly, this approach gives an impression of making forecasts about a future situation. But due to the complexity of

economic, social and political events in LDCs such predictions are dangerous. Thus the future manpower requirements approach based on productivity analysis is arbitrary.

2. Tinbergen-Correa Model. Jan Tinbergen and H. Correa in their study "Quantitative Adaptation of Education to Accelerated Growth" have built an input-output type model for estimating future manpower and educational needs. They attempt to relate directly needed secondary and higher educational outputs to given rates of economic growth, without using the intermediate step of calculating occupational requirements. Essentially, the number of persons required from each educational level is calculated from a series of linear equations which relate the stock of persons completing a given level of education and the number of students in each level to the aggregated volume of production. Its purpose is to suggest what structure of the educational system is needed in order to let the economy grow at a certain rate, and how that structure should change with changes in the growth rate.

The model is based on certain implicit assumptions: (a) education precedes other factors in the production process due to the long time involved in it; (b) there is a fixed coefficient between the number of persons with secondary and higher education levels and the volume of production in the economy; (c) The number of persons with secondary and higher education is the correct number for the existing level of aggregated output; (d) graduates of the educational system are fully employed; (e) the teacher-student ratios are fixed over-time; (f) labour is substitutable at particular levels of education, and (g) technology and productivity remain constant.

Its Criticisms. The Tinbergen-Correa model provides a useful and convenient tool for estimating the educational requirements for economic growth. But it has been criticised due to its implicit assumptions.

First, economists have questioned the assumption of fixed coefficients between the number of persons with secondary and higher education levels and the volume of production. This assumption is based on judgement rather than on reality. It may be applicable to advanced countries but not to LDCs. Further, economic growth implies a faster increase in the volume of production than of manpower. Therefore, the assumption of fixed coefficients breaks down.

Second, Balogh regards the model as simply a quantitative approach to education for he did not find a stable relation between the aggregate output and education. He opines that increasing the conventional education of the western type in LDCs might even reduce output and retard growth.

Third, the assumption that the student-teacher

overtime is based on the experience of developed countries and does not hold in the case of LDCs.

Fourth, the assumption that the number of persons with secondary and higher education is the correct number for the existing level of aggregate output is untenable because there are usually acute shortages or large surpluses in LDCs.

Fifth, the assumption that technology and productivity remain constant in the time period completely ignores their effect on required occupations and educational qualifications.

Lastly, the Tinbergen-Correa model makes "no distinction between technical or academic education, makes no allowance for qualitative imbalances in school curricula, and fails to distinguish between the major economic sectors of the economy."

Chapter 45

ENTREPRENEURSHIP IN ECONOMIC DEVELOPMENT

ROLE OF THE ENTREPRENEUR

The word "entrepreneur" has been taken from the French language where it was originally meant to designate an organizer of musical or other entertainments. In economics, an entrepreneur is an economic leader who possesses the ability to recognise opportunities for successful introduction of new commodities, new techniques, and new sources of supply, and to assemble the necessary plant and equipment, management, and labour force and organise them into a running concern. Whatever be the form of economic and political set-up of the country, entrepreneurship is essential for economic development. In a socialist state, the state is the entrepreneur. So is the case in underdeveloped countries where private entrepreneurship is shy in undertaking the risks associated with new ventures. But in advanced capitalist societies, private entrepreneurs have played the crucial role in economic development.

Over the years, the functions of an entrepreneur have undergone many changes at the hands of economists. According to some economists, the function of the entrepreneur is to undertake risks and uncertainty, to others the coordination of productive resources, to Schumpeter, in particular, the introduction of innovations, and to still others to provide capital. In whatever sense we may view the entrepreneur, he is the kingpin of any business enterprise, for without him the wheels of industry cannot move in the economy. As aptly pointed out by Yale Brozen, "The private entrepreneurship is an indispensable ingredient in economic development over the long period."¹

The entrepreneur may be a highly educated, trained and skilled person or he may be an illiterate person possessing high business acumen which others might be lacking. But he possesses the following qualities: (a) He is energetic, resourceful, alert to new opportunities,

¹Williamson and Buttnick, *op. cit*

able to adjust to changing conditions and willing to assume the risks in change and expansion; (b) he introduces technological changes and improves the quality of his product; and (c) he expands the scale of operations and undertakes allied pursuits, and reinvests his profits.²

According to Fritz Redlich,³ the role of the entrepreneur can be divided into the capitalist, the manager, and the entrepreneur. Thus the entrepreneur supplies funds and other resources, supervises and coordinates productive resources, and plans, innovates and takes ultimate decisions. In a small enterprise, these functions may be performed by the entrepreneur himself. He has his property tied up in his concern which is exposed to the risks of business. He participates fully and often constantly in the actual productive process. According to Hoselitz, "The chief characteristic of a small industrial entrepreneur is not so much his venturesomeness, nor his motivation to make profits, but his capacity to lead other men in a common undertaking and his inclination to introduce innovations; and in the early stages of industrialization,..the overwhelming bulk of these innovations are of a technological nature requiring the direct and immediate participation of the entrepreneur."⁴

In modern corporations, the entrepreneurship is vested in different persons. The shareholders of the company are the capitalists. The managerial function is performed by a number of persons who are specialists in their respective fields, such as the sales manager, the purchase manager, the production manager, the personnel manager, and so on. The entrepreneurial function is performed by the chairman of the board of directors who takes the major decisions through consultation and agreement.

Besides, there are the public enterprises in LDCs which are controlled and managed by the state. The capital is provided by the government, the managers for different departments are drawn from various field of specialisation, and the entrepreneurial decisions are taken by the managers and the party in power.

FACTORS IMPEDED THE GROWTH OF ENTREPRENEURSHIP

Given these three types of entrepreneurs, what are the factors that impede the development of entrepreneurship in underdeveloped countries.

Entrepreneurship is inhibited by the social system which denies

²James T. McCrory, *Small Industry in a North Indian Town*, 1962.

³"The Business Leader in Theory and Reality," AJES, Vol. 8, 1948-49.

⁴Bert F. Hoselitz, 'Entrepreneurship and Economic Growth,' AJES, Vol. 12, October 1952.

opportunities for creative faculties. "The force of custom, the rigidity of status and the distrust of new ideas and of the exercise of intellectual curiosity, combine to create an atmosphere inimical to experiment and innovation."

In LDCs, traditional attitudes discourage the full utilisation of human resources. People are ranked not according to their capacity to do particular jobs but by sex, caste, clan and kinship. Individualistic spirit is absent. People prefer traditional trades and professions rather than venture in new trades. As pointed out by Hagen, villagers and elite alike revere the same economic roles and spurn trade and business, and there is a feeling of repugnance toward work that soils one's hands, in such economies. Thus, "the value system minimises the importance of economic incentives, material rewards, independence and rational calculation. It inhibits the development and acceptance of new ideas and objectives....In short, the cultural value system within many poor countries is not favourable to economic achievement."⁵

In such economies, extreme inequalities in the distribution of income and wealth also stand in the way of the growth of entrepreneurship. Hardly three to five per cent of the people are at the top of the income pyramid who save. They are mostly traders and landlords who do not like to undertake risks in new business ventures but invest in unproductive channels, such as gold, jewellery, precious stones, idle inventories, luxurious real estates, speculation, etc. However, there are some merchants and traders who mostly deal in consumer goods and act as moneylenders and real estate agents.

Besides, there exist a few entrepreneurs who are engaged in the manufacture of some consumer goods, and in plantations and mines that tend to become monopolistic and quasi-monopolistic. They develop personal and political contacts with the government official, enjoy a privileged position, and receive preferential treatment in financial, taxation, exports, imports, etc. It is they who start new industries and thus found individual business empires, such as the Tatas, the Birlas, and the Dalmias in India. Such big business houses inhibit the growth of fresh entrepreneurship within the country.

The thin supply of entrepreneurs in LDCs is also attributed to the lack of infrastructural facilities which add to the risk and uncertainty of new entrepreneurship. Such countries lack in properly developed means of transport and communications, cheap and regular power supply, availability of sufficient raw materials, trained labour, well-developed capital and money markets, etc.

Last but not the least, entrepreneurship is hindered by technological

⁵Meier and Baldwin, *op. cit.*, pp. 298-99

backwardness in LDCs. This reduces output per man and the products are also of substandard quality. Such countries do not possess the necessary technical know-how and capital to evolve their own techniques which may be output-increasing and labour-absorbing. Mostly they have to depend upon imported capital-intensive techniques which do not fit in their factor endowments. Besides, as revealed by Hoselitz, a number of economic, social and administrative resistances force people in such economies to give preference to out-moded techniques over output-increasing techniques.⁶ So far as the Schumpeterian process of innovation is concerned, Professor Harry Wallich opines that "one can hardly say that in less developed countries 'innovation' is its most characteristic feature. The process is better described perhaps as one of assimilation. No one would deny, of course, that to organise a new industry in a less developed country is an art of entrepreneurial initiative. But it is evidently very different from the original process of innovation."⁷ Thus the entrepreneur plays a secondary role in LDCs due to various economic, social and administrative obstacles noted above.

HOW TO ENCOURAGE ENTREPRENEURSHIP

Entrepreneurship is essentially a socio-economic phenomenon. In the past, entrepreneurs have emerged from a particular class. In the United Kingdom, the United States and Turkey, the entrepreneurs were largely from the field of commerce.⁸ The emergence of smaller firms in France was due to their family pattern. In Japan, it was the Samurai who turned to industry and kept their social structure intact by the expedient of adopting vigorous young businessmen or taking them into the family through marriage.⁹

On the other hand, Hoselitz's findings reveal that the founders of early industrial establishments in England, France and Germany were men with mechanical rather than commercial and financial skills. These men came from the ranks of artisans, labourers, yeomen, and cottagers. A few were sons of middle class parents. But the earliest entrepreneurs were men who worked with their hands, whose innovations were in the field of technology, and who in their majority came from the lower, propertyless, classes.¹⁰

⁶ "Problems of Adopting and Communicating Modern Techniques to Less Developed Areas," EDCC, January 1954.

⁷ A.N. Aggarwal and S.P. Singh, *op. cit.*, p. 193.

⁸ K. Kindleberger, *op. cit.*, p. 86.

⁹ M.J. Heryin, *Economic Growth of Brazil, India and Japan*, 1956 (ed.), S. Kuznets.

¹⁰ *Loc. cit.*

Myrdal in his *Asian Drama* points out that the Asian societies lack entrepreneurship not because they lack money or raw materials but because they have very few men with the right attitudes. The Japanese possess these attitudes in abundance judged by the results they have produced in the industrial field. The Chinese and Indians who left their homes in search of better fortunes in the early 20th century established themselves as 'emigre entrepreneurs' in Malaysia, Singapore, Indonesia, Burma, West Indies, and East Africa. Thus, whatever be the motives which have led men to undertake the constructive entrepreneurial acts, this much appears sure that "these motives have varied greatly, from one society to another, and they have rarely, if ever, been motives of an unmixed material character."¹¹

But the main problem in LDCs is to 'create a climate for entrepreneurship.' The creation of such a climate depends, on the one hand, on establishing social institutions which make possible objectively the exercise of independent individual enterprises, and on the other, on the maturation and development of personalities whose dominant orientation is in the direction of productivity, working, and creative integration.¹²

The realization of the first condition depends on a series of political acts which include the modification of the social institutions, the protection of property rights efficiently and the maintenance of law and order within the country. Besides, it requires the establishment of financial institutions which collect savings and canalise them for entrepreneurial activities. To facilitate this process, such financial institutions like the saving banks, investment banks, and the complex of brokers, dealers and commercial banks that comprise the capital and money markets are required. The government should adopt such monetary and fiscal policies which encourage the growth of entrepreneurship.

The shortage of skilled personnel of various kinds such as workers, scientists, technicians, managers, administrators, etc., poses a serious problem in the success of entrepreneurship in LDCs. It necessitates the setting up of scientific, technological, managerial, research and training institutes. Though management and entrepreneurship are two different things in both the private and public sectors, yet scientific, technical and managerial personnel are very important for the success of entrepreneurship.

There is also the need to establish an Entrepreneurship Development Institute in every LDC, as has been done in India in 1983. Such an

¹¹W.W. Rostow, *op. cit.*

¹²B. Hirschman, *op. cit.*

The Economics of Development and Planning
stitute should include a wide spectrum of entrepreneurial and related activities for the selection, development and training of persons for entrepreneurship.

Apart from providing economic overhead capital, the state should also help in evolving appropriate technologies in various fields which may be in keeping with the factor endowments of the country. In case this is not possible, the LDCs should benefit from the vast fund of knowledge in the field of technology of the advanced countries and modify and adapt the techniques of the latter according to their social, economic and technical absorption capacity and requirements. Facilities to finance such techniques and the supply of raw materials, and wider markets will further help in increasing the supply of entrepreneurs. The provision of all the above noted social, economic and technological institutions will push even the latent entrepreneurship in the right direction.

The supply of entrepreneurship depends not only on a set of particular institutions but also upon the development of appropriate personality and motivation which should lead to the growth of entrepreneurship in LDCs. McClelland in *The Achieving Society* has propounded a theory based on his researches that entrepreneurship ultimately depends on motivation. It is the need for achievement (*n-achievement*), the sense of doing and getting things done, that promotes entrepreneurship. According to him, *n-Ach* (*n-achievement*) is a relatively stable personality characteristic rooted in experiences in middle childhood. Variations in *n-Ach* levels were correlated with stories in children's textbooks, and it was found that *n-Ach* was very high in the United States of America 80 or 90 years ago. It is the highest in Russia and China now. It is rising in such developing countries as Mexico and Nigeria. He attributes high *n-Ach* in these countries to ideological reform hypothesis, to Protestantism in Europe and America, to zealous Communist ideology in Russia and China, and to the spirit of nationalism in the developing countries.

No doubt the *n-Ach* factor is important for the growth of entrepreneurship, but it is not possible for LDCs to wait for 15 or 20 years to develop it among children through textbooks alone.

McCllelland along with David Winter¹³ conducted experiments in Kakinada town of Andhra Pradesh in India and revealed that neither money nor caste or traditional beliefs played an important part in the emergence of entrepreneurship there. It was found that those who were trained in the Small Industries Extension Institute at Hyderabad in 1964-65 for a two-week motivational

¹³ *Motivating Economic Achievement*, 1959.

gramme displayed a more active entrepreneurial behaviour later on.

Thus, motivations, abilities and congenial environment all combine to promote entrepreneurship. Since entrepreneurial motivations and abilities are long-run sociological problems, it is better to make the political, social and economic environment congenial for the growth of entrepreneurship in LDCs.

Chapter 46

ROLE OF THE STATE IN ECONOMIC DEVELOPMENT

INTRODUCTION

It is now universally recognized that in order to overcome the rigidities inherent in an LDC, the state must play a positive role. It cannot act as a passive spectator. The problems of LDCs are of such a magnitude that they cannot be left to the free working of the economic forces. Private enterprise is unable to solve them because it does not exist in the modern sense of the term. State action is, therefore, indispensable for the economic development of such countries.

There is then the need for speedy socio-economic reforms to move these countries off the dead centre of stagnation. In the early phase of development, investments will have to be made in those directions which promote external economies, that is, towards creating economic and social overheads like power, transport, education, health, etc. Private enterprise is not forthcoming to undertake these activities as the risks are large and profits are low. There is the need for balancing the growth of the different sectors of the economy so that the supply is adjusted to the demand. State regulation and control is, therefore, essential in order to attain such a balance. It necessitates control over production, distribution and consumption of commodities. For this purpose, the government has to devise physical controls, and monetary and fiscal measures. Further, such measures are inevitable for reducing economic and social inequalities that pervade the underdeveloped countries. "Breaking social chasms and creating a psychological, ideological, social and political situation propitious to economic development becomes the paramount duty of the state in such countries."¹ The sphere of state action is, therefore, very vast and all pervading. It includes "maintaining public services, influencing attitudes, shaping economic institutions, influencing the use of resources, influencing the distribution of income, controlling the quantity of money, controlling fluctuations, ensuring full employment, and influencing the level of investment."² Some of these problems have already been dealt with in the preceding chapters, others are discussed below:

¹G. Myrdal, *Economic Theory and Underdeveloped Regions*, p. 811.

²W.A. Lewis, *op. cit.*, pp. 376-383.

1. Changes in Institutional Framework

One of the important measures of economic development is to bring about changes in the socio-cultural attitudes of the people in the LDCs. Such societies possess religious and cultural traditions which are not conducive to economic development. The institutional framework does not encourage rational individualistic behaviour, and the spirit of competition and enterprise. If economic development is to proceed, social attitudes, values and institutions entrenched in the joint family, caste, kinship and in religious beliefs must undergo change. These require social revolution. Social revolution does not imply the rapid overthrow of the existing institutions. The process of change has to be evolutionary. Otherwise, violent social changes will lead to discontentment, frustration, unrest and violence. These factors will, in turn, inhibit economic growth. Francis Hsu points out that "it took Europe ten centuries or more to produce an individualistic orientation of life which bore economic fruit two hundred years ago, and there does not seem to be any way in which a similar orientation could be generated in a matter of years or even decades."³ Any society attempting to institute it quickly will result "either in apathy or revolt." Thus "much depends upon the way in which the process of growth and change is set in motion, the speed of the process and the extent to which it permeates all sectors of the economy. Generally, a slow but steady development is likely to create fewer political, social and economic tensions; and it is likely that an attempt to force the pace too strenuously may also be economically wasteful because the social and personal changes may not take place which are necessary to enable the individual or the society to form the development necessary to enable individuals or the society to profit and sustain it."⁴

Economic change is not brought about by institutional changes alone. Economic change may take place due to increased capital formation or as a result of technological change which may, in turn, cause institutional changes. Contrariwise, institutional changes may be caused by factors other than economic. Non-economic factors like changes in religious ideas or political framework may bring about changes in institutions. Thus there may be causal relationship between economic and institutional changes or these changes may be independent of each other. Institutions promote economic growth to the extent that they associate effort with reward, permit increased division of labour, expansion of trade and freedom to seize economic opportunities. Once the process of change starts it becomes cumulative. If a change starts in social

³In Williamson and Buttstick, *op. cit.*, p. 357

⁴Bauer and Yamey, *op. cit.*, pp. 70-71

institutions, people will seize new opportunities which will, in turn, further change the institutions.

The new opportunities may come about in many ways. "New inventions may create new commodities or reduce the costs of producing old commodities. New roads, new shipping routes or other improvements in communications may open up new opportunities for trade. War or inflation may create new demands. Foreigners may arrive in the country, bringing new trades, investing new capital or offering new chances of employment."¹⁵ Such new opportunities bring about changes in institutions. These changes are gradual and perceptible. They are initiated by innovators, the new men, who endeavour to break with the past, and mould the old institutional framework into a new setting.

These innovators are townsmen. They face and resist political and social forces. By providing larger and newer opportunities in the economic field, they are ultimately successful in altering old beliefs and institutions. Similarly, contact with foreigners may be instrumental in weakening the established pattern of society. In India, the building of the railroads, the spread of western education and the establishment of industrial centres in the 19th century helped in loosening social and family ties. It was the new attitude of social rationality which gave rise to popular movements for the political freedom of the country. Above all, it is the government which plays a crucial role in influencing the institutional framework. The government can do a lot by introducing reforms in social customs and religious observances, in the system of land use, and in the field of education. It can also initiate economic growth by maintaining law and order, by providing improved public utility services, by fostering new industries, etc.

2. Organisational Changes

Organisational changes also play an important role in economic development. They include the expansion of the size of the market and the organisation of the labour market. These changes can only be performed by the government in LDCs. It is the state which can develop the means of transport and communications for expanding the size of the market because private enterprise is incapable of undertaking such schemes. Besides, the organization and development of financial institutions by the state can help the growth of agriculture and industries. Such financial institutions can be cooperative banks, land mortgage banks, industrial banks, financial and investment corporation, etc.

The organization of the labour market also falls under the functions of the government. An organized labour market increases the productivity of labour. The government helps in organizing labour by recognising labour unions. It fixes working hours, payment of wages, establishes machinery for the settlement of labour disputes, provides for social security measures, etc. Such legislations are meant to establish cordial relations between the employers and employees. As a result, efficiency of labour increases which increases production and reduces costs.

Labour is mostly immobile in underdeveloped countries. The majority of people live in rural areas and are engaged in agricultural operations for a limited period. So they are underemployed or disguised unemployed. Due to the lack of information, they are not aware of employment opportunities in towns and industrial centres. The government can help them in getting jobs by opening information centres in rural areas and employment exchanges in towns. In this way, the government can help in the mobility of labour.

With development labour moves from rural to urban areas, the problems of urbanisation arise which are also required to be solved by the government. Such problems relate to housing, drinking water supply, electricity, slums, transport, etc. The provision for such services as constructing housing colonies, schools, colleges, hospitals, parks, city transport, drinking water, electric supply, etc., falls within the purview of state functions.

3. Social and Economic Overheads

The provision of social and economic overheads in LDCs falls mostly under the state activities. The need for basic services like railways, road transport, telecommunications, gas, electricity, irrigation works, etc., is imperative for future development. Their development entails large investments which are beyond the capacity of private enterprise in such countries. Not only this, investments in public utilities are risky and their benefits accrue only over the long period. It, therefore, devolves on the state to provide these public utilities.

The government should formulate a plan for the development of the essential services on a priority basis. If the immediate need is to provide irrigational facilities, that should be met by concentrating on minor irrigational facilities instead of damming a big river. Moreover, the provision for public utility services does not necessarily imply that they should be owned and operated by the state. The state may approve the plan for a particular project, provide finance and other necessary constructional facilities to a private concern which would construct and own it. Its working might, however, be regulated by the state. In fact, the ownership and operation of an undertaking by the state or the

private enterprise depend on its nature and importance. In India, the development of the means of transport and communications falls within the state activities. The railways, the airways and communications are Government owned and operated, keeping in view their importance in a vast country like India. While the ownership of the road transport is in the hands of both the public sector and the private sector, though the entire operations are regulated by the state. Owning and plying a bus does not involve much expenditure and the returns are also quick as compared to the railways.

Education. Economic development is not possible without education. As Myrdal says, 'To start on a national development programme while leaving the population largely illiterate seems to me to be futile.'⁶ For economic development, it is the quality of labour that is more important. Unskilled workers, even working for long hours, will have a low per capita income. Illiterate and untrained persons cannot be expected to operate and maintain complex machinery. It is by investing in them that their productivity can be increased. It is through public education that the state can increase the effective labour supply and hence the productive capacity of the nation. An educational programme has to be wide and varied. There is the need for primary education so that every child of school going age may receive compulsory education. In order to provide material for the universities and to impart larger educational facilities, more secondary schools are required to be opened. At the same time, training institutes are needed for imparting instructions to mechanics, electricians, artisans, nurses, teachers, agricultural assistants, etc. In the higher educational echelon are the university education and research institutes for turning out ever increasing number of doctors, administrators, engineers, and all types of trained personnel. "Programmes of education lie at the base of the effort to forge the bonds of common citizenship, to harness the energies of the people and develop the nation and human resources of every part of the country."⁷ Investment in such a vast and diverse field as education is only possible through the aegis of the state in LDCs.

Investment in human capital is highly productive. An LDC needs agricultural and industrial technicians, doctors, engineers, teachers, administrators, etc., who would lead to a greater increase of the flow of goods and services, thereby accelerating the tempo of development. But the problem of providing educational facilities to a multitude of people is not within the capacity of an underdeveloped country due to the paucity of funds. Whatever funds are available they have to be

⁶An International Economy, op. cit., p. 186.

⁷GOI, *Third Five Year Plan*.

apportioned on the basis of priorities. And economists differ on the question of priorities. Education is both a consumer and an investment service. To the extent education is an investment, it directly increases productivity.

Money spent on the education and training of doctors, teachers, engineers, administrators is as much a capital investment as money spent on building a dam. But when money is spent on literacy drives to educate the peasantry, it is not regarded directly productive by Lewis. He maintains that "such part of education as is not a profitable investment is on par with other consumer goods, like clothes, houses or gramophones" for it helps the peasants, barbers or domestic servants "to enjoy something more (books, newspapers) or to understand something better."⁸ Professor Galbraith, however, regards investment in educating the masses equally productive. He argues that "to rescue farmers and workers from illiteracy may certainly be a goal in itself. But it is also a first indispensable step to any form of agricultural progress. Nowhere in the world is there an illiterate peasantry that is progressive. Nowhere is there a literate peasantry that is not. Education so viewed, becomes a highly productive form of investment." Galbraith concludes: "That something is both a consumer service and a source of productive capital for the society does not detract all from its importance as an investment. Rather it enhances that importance."⁹ It therefore, devolves on the state to initiate a long-term programmes of educational expansion and reform on a broad front stretching from a literacy drive to the university level, so that in all branches of national life education becomes the focal point of country's development.

Public Health and Family Planning. Another sphere in which the state can undertake positive measures is public health. To increase the efficiency and productivity of labour, the health of the people must be progressively improved. Public health measures include the improvement of environmental sanitation both in rural and urban areas, removal of stagnant and polluted water, slum clearance, better housing, clean water supply, better sewage facilities, control of communicable diseases, provision for medical and health services, especially in maternal and child welfare, and health education and family planning, and above all, for the training of health and medical personnel. All this necessitates planned efforts on the part of the public authorities.

Public health measures assume great importance in LDCs mainly for two reasons: *Firstly*, they help in the development process by augmenting labour productivity and efficiency; and *secondly*, by

⁸Op. cit., p. 183

⁹Op. cit., pp. 46-49.

reducing the mortality rate they tend to increase the rate of population growth, thus making it imperative for the state to adopt family planning and speedy development programmes. But all development efforts will be futile if the growth in numbers is not checked. Since the death rate is already on the decline in LDCs the remedy is to bring down the birth rate from 40 per thousand prevailing in such countries to 20 per thousand. No doubt there is greater need for accelerating development, but to increase per capita income and improve the standard of living, the rate of population increase must be checked and family planning programmes be given top priority. Dr. Stephen Enke has calculated that the value of a new-born baby's life-time net consumption in an LDC is approximately 125 dollars after discounting his lifetime future production. 125 dollars is a negative value and an economic burden on overpopulated LDCs.¹⁰

Family planning is the deliberate reduction of fertility. Family planning programme should consist of:

1. Education of the people in family planning, which should include sex education, marriage counselling and child guidance. The media for this may be social organizations, films, the radio, and literature.
2. Family planning services should be made on much larger scale. Family planning services can be integrated with the normal health and medical services. Family planning clinics should be opened in rural areas, in industrial, and other establishments. There should be mobile units to educate the masses in the art of family planning. The help of voluntary organizations can also be taken. The family planning centres should tender free advice, distribute contraceptives, and even undertake vasectomy free of charge. They may be subsidized by the government.
3. Establishment and maintenance of a large network of centres for the training of workers.
4. An expanded research programme in biological, medical and population problems. In India such a programme includes: (i) development of studies of human genetics; (ii) studies in the physiology of reproduction; (iii) development of more effective local contraceptives; (iv) development of a suitable oral contraceptive; and (v) follow-up sterilization cases, both male and female, to investigate after-effects in such cases.
5. Contraceptives should be manufactured indigenously so that their supplies should not lag behind to implement a widespread family planning programme. Moreover, they should be simple, cheap and safe.
6. There should be financial and other incentives to encourage

¹⁰Op. cit., pp. 363-371.

parents to have fewer children. Incentives may include payments to an individual or couple to limit children. The limit is two children in India and one child in China. Disincentives are the withholding of social benefits from or imposing penalties on those whose family size exceeds the desired norm.

7. Emphasis should be laid on removing social barriers to birth control, raising the marriageable age, longer breast-feeding, educating the women, and providing larger employment opportunities in the suburbia.

8. Some protagonists of family planning advocate legalized abortion. They cite the example of Japan to substantiate their argument where in the decade following the Second World War, the birth rate was brought down to one-half of its previous level. It has been estimated that 66 per cent of the reduction in births was due to legalized abortion in Japan. In India, abortion has been legalized since 1976. Other LDCs can also follow the lead given by Japan.

Above all, there should be a population policy to reduce the rate of population growth. It should have a wide range of policies, direct and indirect, to bring socio-economic changes in order to reduce fertility.

To sum up, in the words of Lewis, "One needs to put all the ingredients into this pie; to convert social leaders into seeing the dangers of a high birth rate, so that the taboos and religious sanctions turn against it, instead of its favour; to raise standards of living and education rapidly, so that women find it convenient to have fewer children; and to make widespread propaganda about birth control techniques. Action is needed on all fronts simultaneously."

4. Agricultural Development

Agriculture is the predominant occupation in LDCs and contributes more than half the share of the national income. Despite this, agriculture remains in a state of stagnation. The share of the national income is disproportionately small in relation of the number of persons engaged in it. For instance, in India about 70 per cent of the population is engaged in agriculture while it contributes roughly 50 per cent to the national income. The fundamental cause is the low agricultural productivity per acre. The reasons for the low yield are the uneconomic size of the holdings, the fragmentation of land holdings, the defective land tenure system characterised by high rents, and insecurity of tenure, the lack of adequate credit facilities, indebtedness, the absence of irrigation facilities and dependence on rainfall, the use of obsolete methods of production, and the excessive pressure of population on land.

In LDCs the peasants are poor, illiterate and ignorant. They lack

PART FIVE

INTERNATIONAL MEASURES FOR ECONOMIC DEVELOPMENT

Chapter 47.

ROLE OF FOREIGN TRADE IN ECONOMIC DEVELOPMENT

INTRODUCTION

The role of foreign trade in economic development is considerable. The classical and neo-classical economists attached so much importance to international trade in a country's development that they regarded it as an engine of growth. The opposite view holds that historically foreign trade has led to international inequality whereby the rich countries have become richer at the expense of the poor countries. It is, therefore, contended that even if LDCs are required to sacrifice the gains from international specialisation, they can attain a higher rate of development by following the policies of import substitution. We shall first discuss how international trade helps economic development and then the opposite view as to how far it has inhibited the development of LDCs.

Importance of Foreign Trade

Foreign trade possesses great importance for LDCs. It provides the urge to develop the knowledge and experience that make development possible, and the means to accomplish it.¹ Haberler opines, "My overall conclusion is that international trade has made a tremendous contribution to the development of less developed countries in the 19th and 20th centuries and can be expected to make an equally big contribution in the future... and that substantial free trade with marginal, insubstantial corrections and deviations, is the best policy from the point of view of economic development."²

Direct Benefits. When a country specialises in the production of a few goods due to international trade and division of labour, it exports those

¹A.K. Cairncross, *op. cit.*

²G. Haberler, *International Trade and Economic Development*, 1959. Italics mine.

commodities which it produces cheaper in exchange for what others can produce at a lower cost. It gains from trade and there is increase in national income which, in turn, raises the level of output and the growth rate of economy. Thus the higher level of output through trade tends to break the vicious circle of poverty and promotes economic development.

An LDC is hampered by the small size of its domestic market which fails to absorb sufficient volume of output. This leads to low inducement to investment. The size of the market is also small because of low per capita income and of purchasing power. International trade widens the market and increases the inducement to invest income and saving through more efficient resource allocation.

Myint³ has applied Smith's "vent for surplus" theory to the LDCs for measuring the effects of gains from international trade. The introduction of foreign trade opens up the possibility of a "vent for surplus" (or potential surplus) in the primary producing LDCs. Since land and labour are underutilised in the traditional subsistence sector in such a country, its opening up to foreign trade provides larger opportunities to produce more primary products for export. It can produce a surplus of primary products in exchange for imports of manufactured products which it cannot itself produce. Thus it benefits from international trade. The vent for surplus theory, as applied to an LDC, is explained in Fig. 47.1. Before trade with underutilised resources, the country is producing and consuming OX_1 of primary products and X_1E of manufactured products at point E inside the production possibility curve AB . With the opening up of foreign trade, the production point shifts from E to D on the production possibility curve AB . Now the utilisation of formerly underutilised land and labour enables the country to increase its production of primary exportables from OX_1 to OX_2 without any sacrifice in the production of other goods and services. Given the international terms of trade line PP' , the country exchanges ED ($=X_1X_2$) more of primary exportables against EC larger manufactured importables.

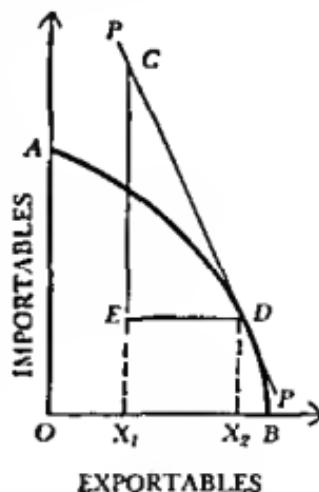


FIG 47.1

³H. Myint, "The Classical Theory of International Trade and the U Countries," *EJ*, June 1958

Moreover, many underdeveloped countries specialise in the production of one or two staple commodities. If efforts are made to export them, they tend to widen the market. The existing resources are employed more productively and the resources allocation becomes more efficient with given production functions.

As a result, unemployment and underemployment are reduced; domestic saving and investment increase; there is a larger inflow of factor inputs into the expanding export sector; and greater backward and forward linkages with other sectors of the economy. This is known as the "staple theory of economic growth", associated with Watkins.⁴ Foreign trade also helps to transform the subsistence sector into the monetized sector by providing markets for farm produce and raises the income and the standards of living of the peasantry. The expansion of the market leads to a number of internal and external economies, and hence to reduction in cost of production. These are the direct or static gains from international trade.

Indirect Benefits. Besides, there are indirect dynamic benefits of a high order from foreign trade, as pointed out by Mill. By enlarging the size of the market and the scope of specialisation, international trade makes a greater use of machinery, encourages inventions and innovations, raises labour productivity, lowers costs and leads to economic development. Moreover, foreign trade acquaints people with new products, tempts and goads them to work harder to save and accumulate capital for the satisfaction of their new wants. It also leads to the importation of foreign capital and instills new ideas, technical know-how, skills, managerial talents and entrepreneurship. Lastly, it fosters healthy competition and checks inefficient monopolies.⁵ Let us study these indirect benefits of foreign trade to underdeveloped countries in detail.

First, foreign trade helps to exchange domestic goods having low growth potential for foreign goods with high growth potential. The staple commodities of underdeveloped countries are exchanged for machinery, capital goods, raw materials, and semi-finished products required for economic development. Being deficient in capital goods and materials, they are able to quicken the pace of development by importing them from developed countries, and establishing social and economic overheads and directly productive activities. Thus larger exports enlarge the volume of imports of equipment that can be financed without endangering the balance of payments and the greater

⁴G. Haberler, *op. cit.*

⁵M.H. Watkins, "The Staple Theory of Economic Growth," *Canadian Journal of Economics and Political Science*, May 1962.

degree of freedom makes it easier to plan domestic investment for development.

Second, foreign trade possesses an "educative effect". Underdeveloped countries lack in critical skills, which are a greater hindrance to development than is the scarcity of capital goods. Foreign trade tends to overcome this weakness. For, it is, in the words of Haberler, "the means and vehicle for the dissemination of technical knowledge, the transmission of ideas, for the importation of know-how skills, managerial talents and entrepreneurship." The importation of ideas, skills and know-how is a great stimulus to technological progress in underdeveloped countries. It provides them with an opportunity to learn from the successes and failures of the advanced countries. Foreign trade helps in accelerating the development of poor countries by facilitating the selective borrowing of ideas, skills and know-how from the developed countries and adopting them in accordance with their factor endowments. Even the rapid development of the USA, Japan and Soviet Russia has been the result of the educative effect of foreign trade.

Third, foreign trade provides the basis for the importation of foreign capital in LDCs. If there were no foreign trade, foreign capital would not flow from the rich to the poor countries. The volume of foreign capital depends, among other factors, on the volume of trade. The larger the volume of trade, the greater will be the ease with which a country can pay back interest and principal. It is, however, much easier to get foreign capital for export-increasing industries than for import substitution and public utility industries. But from the point of view of the importing country, the use of foreign capital for import substitution, public utilities and manufacturing industries is more beneficial for accelerating development than merely for export promotion. Foreign capital not only helps in increasing employment, output and income but also smoothens the balance of payments and inflationary pressures. Further, it provides machines, equipment, know-how, skills, ideas, and trains native labour.

Lastly, foreign trade benefits an LDC indirectly by fostering healthy competition and checking inefficient monopolies. Healthy competition is essential for the development of the export sector of such economies and for checking inefficient exploitative monopolies that are usually established on the grounds of infant industry protection.

Thus foreign trade, in addition to the static gains resulting from efficient resource allocation with given production functions, powerfully contributes in four ways indicated above, by transforming existing production functions and pushing them upwards and outwards.⁶

⁶G. Haberler, op. cit.

Its Criticisms

The foregoing analysis, based as it is on the comparative cost doctrine, has been criticised by economists like Prebisch, Singer and Myrdal.⁷ They opine that historically international trade has retarded the development of LDCs. Three arguments are usually advanced in support of this view that international trade has impeded development.

1. International trade has strong backwash effects on the LDCs, according to Myrdal. He writes, "Trade operates (as a rule) with a fundamental bias in favour of the richer and progressive regions (and continues) and in disfavour of the less developed countries."⁸ Unhampered trade between two countries of which one is industrial and the other underdeveloped, strengthens the former and impoverishes the latter. The rich countries have a large base of manufacturing industries with strong spread effects. By exporting their industrial products at cheap rates to LDCs, they have priced out the small-scale industry and handicrafts of the latter. This has tended to convert the backward countries into the producers of primary products for exports. The demand for primary products being inelastic in the export market, they suffer from excessive price fluctuations. As a result, they are unable to take advantage of either a fall or a rise in the world prices of their exports. The importing countries take advantage of the cheapening of their products because of the inelastic market for their exports. Similar advantages follow when there is any technological improvement in their export production. When the world prices of their products rise, they are again unable to benefit from it. Increased export earnings lead to inflationary pressures, malallocation of investment expenditure and balance of payments difficulties when they are wasted in speculation, conspicuous consumption, real estate, foreign exchange holdings, etc.

2. It has been contended that the operation of the international demonstration effect through foreign trade has adversely affected capital formation in LDCs.

3. In the opinion of Prebisch there has been a secular deterioration in the terms of trade of the LDCs. It implies that there has been an international transfer of income from the poor to the rich countries and that the gains from international trade have gone more to developed countries at the expense of the former, thereby reducing their level of real income and hence their capacity for development.

But all these criticisms are unfounded. There is no empirical evidence

⁷R. Prebisch, *The Economic Development of Latin America and its Principal Problems*, 1950; H.W. Singer, 'The Distribution of Gains between Investing and Borrowing Countries', *American Economic Review*, May 1950; G. Myrdal, *An International Economy*, 1956.

⁸G. Myrdal, *Challenge to Affluence*, 1963.

to prove that the development of the export sector has been at the expense of the domestic sector. Foreign trade has not always stood in the way of domestic investment. Nevertheless, as pointed out by Nurkse, "even unsteady growth through foreign trade is surely better than no growth at all."

The adverse effects of the demonstration effect are also exaggerated. Emulation of higher standards of living and superior consumer goods act as incentives to increased effort and productivity on the part of the people of LDCs. It encourages the development of service occupations to supply superior goods. It also exercises a healthy influence in stimulating local initiative and enterprise. Again, the adoption of the western consumption standards tends to influence the subsistence sector favourably. The incorporation of milk, eggs, vegetables, and fruits in diet induces agriculturists to produce them more for the market, in addition to subsistence production. It involves the investment of more capital and making improvements in agriculture, dairy and poultry production. This also provides increased employment, income and leads to further capital accumulation. The subsistence economy itself tends to be converted to an exchange economy gradually. The government is encouraged to provide more amenities in the form of improved means of transport, communications, irrigation, power, etc. There is also a tendency on the part of the people to move from the villages to towns to seek jobs in those secondary and service occupations which produce the new consumer goods and services. Imitation of advanced production methods further helps in increasing the rate of capital accumulation in LDCs. Governments in such countries have encouraged the transmission of improved techniques like the L-D process of steel production, the introduction of high-yielding maize hybrids, and Mexican wheat, the Japanese method of rice cultivation, improved seeds and fertilizers, etc. It is, therefore, not wholly correct to say that the international demonstration effect inhibits the propensity to save and the rate of capital formation in LDCs. In fact, by imitating the consumption and investment patterns of the advanced countries they have been able to accelerate the pace of economic development.

So far as the problem of deterioration in the terms of trade of the LDCs is concerned, it is conjectural and based on obsolete data. In the first instance, every LDC is dependent upon a very narrow range of export of primary products. Moreover, such countries produce only a part of the world's total exports of minerals and agricultural products. Cairncross has shown that in 1937 the volume of primary products from the industrial countries was slightly lower than in 1913 while exports from non-industrial countries were over 50 per cent higher. By 1950, there had been a spectacular change when exports from other countries

fell sharply. In 1957, both groups had added 50 per cent to the volume of their exports of primary products. Thus both groups experienced 50 per cent expansion in the volume of exports between 1950-57. *Lastly*, this view fails to take into account changes in the pattern of exports and imports of underdeveloped countries. LDCs are no longer exporters of primary products and importers of manufactures. According to GATT, they import only one-third of their total consumption of manufactured articles and even this proportion is on the decline. They produce the remaining two-thirds at home.⁹ Mostly they import capital goods, raw materials and food-stuffs. Manufactured consumer goods hardly form 10 per cent of their total imports. On the other hand, their exports consist of textiles, light engineering goods, machine tools, steel, and a variety of manufactured consumer goods. The reason for the deterioration in the terms of trade of underdeveloped countries has not been the declining world demand for their primary products, but inflationary pressures leading to high costs and prices, and a large external deficit which act as a drag on their exports.

Conclusion. Thus it is an erroneous view that international trade has operated as a mechanism of international inequality and has retarded the development of LDCs. Rather, foreign trade has acted as an *engine of growth* for them. Thus Cairncross is right in saying, "Over the past century and a half the growth of international trade has continued to open up new opportunities of specialisation and development for the countries engaged in it. These opportunities were particularly in the primary producing countries overseas that were still in the process of settlement, since trade enabled them to bring into use unexploited natural resources and freed them from the limitations of their own domestic markets."

NOTE ON PREBISCH-SINGER THESIS

The Prebisch-Singer thesis enunciates that the secular deterioration in the terms of trade has been an important factor in inhibiting the growth of underdeveloped countries. The terms of trade between the peripheral underdeveloped countries and the cyclical centres (developed countries) have shifted in favour of the latter because monopolistic elements in their product and factor markets have allowed them to keep the benefit of their technological progress in the form of rising factor incomes, whereas in the former the gains in productivity have been distributed in price reductions.

Prebisch assumes that the capacity to import or income terms of trade

⁹*International Trade*, 1959, GATT.

is the determining factor of economic growth in LDCs and the terms of trade is the most important 'conduit' for transmission of productivity gains from cyclical centres (DCs) to the peripheral countries (LDCs). His contention is that in the organic growth of the world economy, over the last seventy years, the primary producing LDCs have failed to share in the gains of this world economic growth generated by the DCs and the reason for this has been their declining capacity to import.¹⁰ He points out on the basis of the United Kingdom's terms of trade with the poor countries that between the 1870s and the 1930s there was a secular downward trend in the prices of primary goods relative to the prices of manufactured goods. The reason for their price movements has been that "in the centre the incomes of entrepreneurs and productive factors increase relatively more than productivity, whereas in the periphery the increase in income is less than that in productivity.... In other words, while the centres kept the whole benefit of technical development of their industries, the peripheral countries cannot spare to them a share of the fruits of their own technical progress."¹¹ The peripheral countries have not only failed to share in the productivity gains of the developed countries but also in retaining their own productivity gains because of population pressures, technological backwardness and for the principal reason that their economic activity is dominated by the cycles of industrial activity in the developed countries.

Singer's¹² contention is that the opening of the LDCs to foreign trade and investment has tended to inhibit their development since the purpose and effect of these investments have been to open up new sources of food for people and for the machines of developed countries. The specialisation of LDCs in exports of food and raw materials to industrialized countries, largely as a result of investment by the latter has been unfortunate for the LDCs for three reasons: (i) The investing countries have reaped the larger share of the cumulative multiplier effects of foreign investment as a result of heavy profit remittances abroad. (ii) It has "diverted the underdeveloped countries into types of activity offering less scope for technical progress, internal and external economies taken by themselves...." (iii) It has led to the deterioration in the terms of the trade of LDCs. In the words of Singer: "It is a matter of historical fact that ever since the seventies the trend of prices has been heavily against sellers of food and raw materials and in the favour

¹⁰F.A. Mehta, "The Effects of Adverse Income Terms of Trade on the Secular Growth of Underdeveloped Countries," *Indian Economic Journal*, January 1957.

¹¹R. Prebisch, *Economic Development of Latin America and Principal Problems*, 1950.

¹²J.W. Singer, "The Distribution of Gains Between Investing and Borrowing Countries," *American Economic Review*, May 1950

of the sellers of manufactured articles."

Of the three factors, the last one has been crucial in impoverishing the LDCs because the developed countries have gained in the form of higher wages and profits by exporting manufactured articles to the LDCs at higher prices whereas the gains in food and raw material production in the LDCs have been dissipated in price reductions thereby again benefiting the developed countries. This is reflected in rapidly rising standards of living of the latter as against the former. The operation of Engel's Law has been a major factor in accentuating price differentials between the 'peripheral' and the 'centre'. As incomes rise, the demand for food rises more slowly than the demand for manufactured articles. As a result of technical progress in manufacturing, there is reduction in the amount of raw materials used per unit of output. Thus the demand for raw materials falls. This fall in demand along with low price elasticity of demand for both raw materials and food results in large price falls, both cyclically and structurally. "At the same time, the short-run supply is said to be equally inelastic and equally subject to erratic shifts occasioned by forces of nature; a drought or disease can decimate a crop or the weather may produce a bumper harvest. Consequently, prices are said to be very volatile. In general price fluctuations in the post-war period have however been more often caused by changes in demand than by changes in supply." This is illustrated in Fig. 47.2 where D and S represent world demand and supply curves of primary products which are inelastic. A small increase

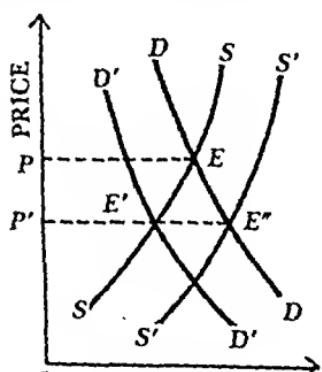


FIG. 47.2

in supply from SS to $S'S'$ or decrease in demand from DD to $D'D'$ will lead to a large fall in price from OP to OP' . Thus the developed countries have enjoyed beneficial cumulative effects in their dual capacity as consumers of imported food and raw materials at low prices and as producers of high-priced exportable manufactured articles, whereas the LDCs suffered both as producers of low-priced food and raw materials and consumers of high-priced imported manufactures.

According to Singer, the fairly widespread impression that this trend toward deterioration in the terms of trade of primary producers has been reversed since pre-war days has not been borne out by facts. The LDCs have failed to benefit from high prices for their primary products because they use the profits for expanding their production rather than investing them in capital goods. Conversely when prices are low they do

not have the means to industrialize, though the desire is great. Here again it seems, writes Singer, "that the underdeveloped countries are in danger of falling between two stools: failing to industrialize in a boom because things are as good as they are, and failing to industrialize in a slump because things are as bad as they are."

The remedy Singer suggests is that the LDCs should absorb the flow of international investment into their economic system by reinvesting its profits, by generating complementary domestic investment, and by finding the requisite domestic resources for this. Prebisch and Myrdal, on the other hand, favour protectionist measures for them.

Its Criticism. Economists have severely criticised the Prebisch-Singer secular deterioration theory both for its statistical and analytical arguments.

1. The thesis is based entirely on the 'inverse' of the annual index of the United Kingdom's commodity terms of trade. This is a weak statistical base for the generalisation that historically the terms of trade of LDCs have deteriorated between 1870 and 1930s. Certain objections are advanced against the terms of trade index: *First*, this index does not take into account quality changes in the products and makes little allowance for new products. This introduces a bias against primary products which remain almost unchanged in quality; and in favour of industrial products which are improved in quality and range. *Second*, the terms of trade index leaves out services. In the British terms of trade import prices are taken *c.i.f.* and export prices *f.o.b.*, so transport costs are covered in import prices and excluded in export prices. Even if transport costs change, the terms of trade of one country cannot be regarded as an accurate index of the terms of trade of the other. Thus any computation that omits services like transport costs will naturally be biased against the LDCs. *Third*, the thesis is a generalisation based on the British terms of trade which cannot be taken as representative of other developed countries. Kindleberger¹³ has proved on the basis of his computation of indices for other European countries that the generalisations based on the terms of trade of the United Kingdom do not hold good for other DCs. *Fourth*, even taking the terms of trade of the United Kingdom as representative of the DCs, the import-price index is a mixed bag concealing different price trends in foodstuffs, minerals and raw materials. *Fifth*, the commodity terms of trade between primary products and manufactured articles are not the same as between underdeveloped and developed countries. *Last*, it is not correct to move on the presumption that the prices of different primary products like foodstuffs, minerals, raw materials all moved

¹³C P. Kindleberger, *The Terms of Trade, a European Case Study*, 1956

together. Moreover, the LDCs export varied primary products. It is, therefore, wrong to group them together for the purpose of the thesis. Haberler asks in this connection, "Can any one seriously maintain that the long-run change in the terms of trade is the same for: (a) agricultural exporters (Argentina, Uruguay), (b) mining countries (Bolivia), (c) coffee exporters (Brazil) and (d) petroleum exporters (Venezuela)."

2. The secular deterioration thesis has not been proved correct by modern researches made by Kindleberger, Ellsworth, Morgan, Haberler and Lipsey.¹⁴ Lipsey concludes in his study thus, "Two widely held beliefs regarding net barter terms of trade found no confirmation in the data for the United States. One is that there has been a substantial long-term improvement in the terms of trade of developed countries, including the United States; the other, that there has been a significant long-term deterioration in the terms of trade of primary as compared to manufactured products. Although there have been very large swings in US terms of trade since 1879, no long-run trend has emerged. The average level of US terms of trade since World War II has been almost the same as before World War I."

3. It is not correct to identify that all LDCs export primary products and all developed countries export manufactures because there are many LDCs like India that also export manufactures, and developed countries like Australia and Denmark often export primary products.

4. The argument that monopolistic element in the DCs have kept the benefits of technical progress with themselves and have hurt the producers of primary products in LDCs has not been proved by any empirical evidence.

5. The contention that the operation of Engel's law tends to reduce secularly the demand of developed countries for primary products has been exaggerated because this law applies to food and not to raw materials. Moreover, "relative prices depend not only on demand but also on supply conditions which are likely to change profoundly over long periods."

6. According to Freddie Mehta,¹⁵ the terms of trade is not the most important determinant of economic development. Though productivity gains have not been passed on to the underdeveloped countries in the form of low-priced manufactures, yet they have been passed on to them in the form of 'product improvement', 'product inventions' and 'product diversification'. They have actually benefited from foreign investments.

¹⁴C.P. Kindleberger, *Ibid.*; P.T. Ellsworth, "The Terms of Trade between Primary Producing and Industrial Countries," *Inter-American Economic Affairs*, Summer 1956; T. Morgan, "The Long-Run Terms of Trade between Agricultural and Manufacturing," *Econometrica*, 1957, G. Haberler, *International Trade and Economic Development*, 1959; and R.E. Lipsey, *Price and Quantity Trends in the Foreign Trade of the U.S.*, 1963.

¹⁵F.A. Mehta, *op. cit.*

7. It is unreasonable to infer from the conditions of 1870 to 1930 that there has been a secular deterioration in the terms of trade of LDCs due to the declining world demand for their primary products. Tremendous changes have taken place in methods of production and transportation in world production and trade, and in world population and standards of living since 1870. It is, therefore, not possible to assess their impact on the terms of trade.

8. According to MacBean,¹⁶ export instability in LDCs seems to arise from quantity fluctuations than from changes in prices. This suggests that policies which aim solely at price stabilisation may remove relatively little of the export instability and in some cases may even increase fluctuations in total proceeds.

9. As a policy measure, Prebisch suggests protection while Singer favours better utilisation of foreign capital. There is no dispute with regard to Singer's suggestion, but Prebisch has been severely criticised for his protectionism. Myrdal doubts that the underdeveloped countries possess sufficient monopoly or monopsony power to improve their terms of trade by imposing import or export duties. Even if they were to have monopolistic cooperation, the gain would be short-lived because it could be negated by retaliatory measures or by changes in the value of the demand and supply elasticities.¹⁷ The policy measures are weak because they fail to emphasize the importance of export promotion, import substitution and monetary and fiscal measures to correct the terms of trade.

Conclusion. Despite these criticisms, the Prebisch-Singer thesis has been vindicated by recent data on the terms of trade between the LDCs. For instance, the *UNCTAD Trade and Development Report*, 1981, reveals that from 1960-73 the low-income LDCs with per capita GNP under \$ 400 showed a decline in terms of trade by 11 per cent, the middle-income LDCs with per capita GNP between \$ 400 and \$ 800 showed improvement by 6 per cent, and the high income LDCs over \$ 800 GNP per capita showed an improvement by 3 per cent. But the non-OPEC underdeveloped countries showed a decline in terms of trade by 12 per cent between 1958 and 1978, whereas all the LDCs including OPEC showed a decline of 5 per cent.

An *IMF Survey*, 1982, for 30 primary commodities exported by the LDCs, excluding petroleum and gold, showed that between 1957 and 1982, the terms of trade (1975=100) of primary exports of the LDCs versus manufactured exports of DCs declined by 32 per cent. Commodity-wise, the decline for food was 27 per cent, agricultural raw

¹⁶A.T. MacBean, *Export Instability and Economic Development*, 1966

¹⁷G. Myrdal, *An International Economy*, 1955

materials by 45 per cent, and beverages and metals by 28 per cent each.

We may conclude with Streeten that there are still forces at work that make for an uneven distribution of gains from trade and economic progress generally, so that the lion's share goes to the lions, while the poor lambs themselves are swallowed up in the process.

Chapter 48

COMMERCIAL POLICY AND ECONOMIC DEVELOPMENT

MEANING

Commercial policy plays an important part in the economic development of an LDC. Commercial policy may be defined as one that helps in accelerating the rate of economic development. (a) by enabling the underdeveloped country to have a larger share of the gains from trade, (b) by augmenting the rate of capital formation, (c) by promoting industrialization; and (d) by maintaining equilibrium in the balance of payments.

ARGUMENTS FOR AND AGAINST

Various arguments have been put forth in support of such a commercial policy which inevitably aims at the adoption of protective

1. The Terms of Trade Argument. The increase in the gains from trade of an underdeveloped country is based on the terms of trade argument. A shift in the terms of trade in favour of an underdeveloped country is tantamount to an increase in its national income. If a country imposes a tariff that brings about a fall in import prices or a rise in export prices, it will result in improving its terms of trade. This will naturally help in financing economic development as its income will increase and it will be in a position to import larger quantities of capital goods.

Its Limitations. On the face of it this argument sounds logical, but it is not without certain reservations. First, improvement in the terms of trade will have little relevance if the increased foreign income is not saved but dissipated in luxury and imported goods. Mere saving is not enough. What matters is its investment in export goods. Second, for such a tariff policy to be successful, there must be a united economic group. It is difficult to implement such a policy in view of the small size of the domestic market for an export commodity and the ability of the developed countries to do

for the natural products of such countries. *Third*, a tariff policy of this type is effective only if the "foreign-offer curve" is inelastic. But in the case of underdeveloped countries, the foreign-offer curve is usually elastic. As a result, they supply less exports and demand less imports as the price of imports rises. The higher is this elasticity, the greater will be the fall in the volume of trade as a result of the imposition of tariff. These price elasticities of supply and demand act as one of the important limitations to the terms of trade argument.

However, discounting all these limitations, "it is likely that the gain from trade would be only a short-term gain which would be eliminated quickly by retaliatory measures by other countries, changes in elasticities or by changes in the government's "expenditures of customs revenue or an internal redistribution of income."¹

2. The Saving Ratio Argument. One of the principal sources of capital formation is an increase in the tempo of investment by stepping up domestic savings. Domestic savings can be stepped up by restricting the importation of consumer goods through direct controls or prohibitive duties. The consumption expenditure is thereby reduced which is equivalent to an increase in savings. This increase in savings is, in turn, utilized for importing capital goods. Thus for capital formation, the necessary condition is that a reduction in the imports of consumer goods must be followed by an increase in the imports of capital goods of the same value.

Its Limitations. But this argument is also not free from limitations. *First*, if the import restrictions do not result in reducing consumers' expenditure, but lead to a shift of expenditure from imported to domestic consumption goods, the demand for the latter goods will rise in relation to their supply and there will be an inflationary pressure on prices and costs. As Nurkse puts it aptly, "When the escape valve of consumable imports is shut off, the pressure of the steam in the system increases, demand becomes excessive in relation to domestic supply and tends to push up the level of prices."² *Second*, the increase in home consumption will also occur at the cost of home investment because increased consumption draws domestic factors away from capital construction or maintenance. Leaving aside an increase in voluntary savings, capital formation can, however, take place by purchasing imported capital goods through forced saving that results from inflation. *Third*, if the import restrictions on luxury consumption goods are not accompanied by similar restrictions on the domestic production of these goods, domestic savings will be sucked into non-essential channels.

¹Meier and Baldwin, *op. cit.*, p. 404. Italics mine.

²Ibid., p. 112.

Thus the "economy surrenders through the back-door what it secures by the front-door." It cannot be denied that economic growth does take place in this way, but it takes a needlessly painful and contorted form. *Fourth*, this argument assumes that a policy of import restriction on consumption goods does not affect exports adversely. If import restrictions are placed to protect domestic import-competing industries they are likely to attract resources away from the export industries. Then the exports will be adversely affected. It is also possible that the incentive to peasants to produce the exportable crops may be damped by the denial of imported consumption goods. *Fifth*, a policy of import restrictions leading to an increase in domestic costs and prices may have an unhealthy effect on exports. Thus Nurkse observes: "The simple idea that more capital can be got for the country merely by pinching and twisting the foreign trade sector is an instance of the fallacy of misplaced concreteness."³

3. The Foreign Investment Argument. Protection also acts as a source of capital formation by attracting direct foreign investment in the underdeveloped country. One of the methods is the setting up of tariff factories in the tariff imposing country by the foreign manufacturer in order to escape the import controls. The foreign manufacturer may set up a branch or subsidiary of his firm alone or in collaboration with local enterprise behind the tariff wall when the finished products are prohibited while raw materials and necessary parts are permitted duty free. Some of the foreign industrial investment in India, in recent years, has been of this type. But the main obstacle in the flow of direct foreign capital has been the small size of the domestic market for the restricted imports in the underdeveloped countries. A wide domestic market acts as a big incentive in attracting foreign capital. As Nurkse puts it bluntly: "Tariff protection, if it can help at all, can only help the strong, it cannot help the weak."⁴

4. The Infant Industry Argument. The famous Listian "infant industry" argument in favour of protection gives enough inducement to underdeveloped countries in accelerating their pace of industrialization. There are some industries which can be fruitfully developed in underdeveloped countries provided they are protected from foreign competition. In the present, their costs of production may be more due to the lack of certain basic facilities, but in due course of time, after the initial difficulties are overcome, their products would cost less. The future fruits of industrialization would more than compensate for the sacrifice undergone in the form of higher prices in the present. Thus the

³Ibid., p. 115.

⁴Ibid., p. 106.

argument is that "infant" industries need protection from foreign competition till they attain adulthood. The period between infancy and adulthood is generally characterized by a transition from the agricultural to the industrial stage. Myrdal has assigned "four special reasons for industrial protection in underdeveloped countries—the difficulties of finding demand to match new supply, the existence of surplus labour, the large rewards of individual investments in creating external economies, and the lop-sided internal price structure disfavouring industry."⁵ These reasons are interrelated and provide an "infant economy" case for protection to an underdeveloped country.

Its Limitations. But it has its limitations. *First*, according to Nurkse, infant industry protection alone is an ineffective instrument of promoting economic development because it overlooks the problem of capital supply. *Second*, infant industry protection should not be given before the industry has been actually set up. As Nurkse said, "Infant creation must take precedence over infant protection." *Third*, tariff protection cannot create or increase the supply of capital required by the infant industry. If can, however, make a contribution on the demand side by increasing the inducement to invest in the protected industry. But this argument is confined only to creating demand for import-substitutes. *Fourth*, it is also doubtful whether the stress on import-substitutes will be enough to lead to a balanced growth of the economy. For, without an overall growth of the economy, investment in the import-competing industries will be very small. Nurkse cautions that too much reliance on import restrictions should be avoided because the import-substitutes produced at home are costly and tend to reduce real income.⁶ *Fifth*, given that the infant industry has been created, it must satisfy a number of conditions for the policy of protection to be successful. It is essential that the industry would not develop without the help of protection and that eventually it would be able to stand on its own legs when protection could be removed. Above all, it should acquire enough skill and experience to produce at low costs. It implies that though in the initial stages there may be losses, yet in the future the industry should be in a position to realize sufficient saving in costs. *Sixth*, it is also difficult to decide the amount and the period of protection to be given to the infant industry. For making these decisions Dr Lakdawala stresses, "It is necessary not only to know and forecast the domestic demand and supply conditions but also those of the rest of the world. An error of judgement may prove costly; as the possibilities of reversal are limited. Once a protected industry comes into existence, even if it does not grow

⁵G. Myrdal, *An International Economy*, p. 279

⁶Nurkse, *op. cit.*, pp. 105-108.

out of its infancy, it has to be borne with, especially in countries where the employment problem presents concern. To minimize the chances of failure, it is necessary not only to insist on a competent impartial enquiry as a prior condition, but also the government has to act as watchdog to ensure the full efficiency and productivity of protected industries." Seventh, assuming that these requirements have been satisfied, the right selection of infant industries is somewhat uncertain because it is difficult to forecast changes in costs and the extent of external economies in the future. It is, therefore, advisable to impose a uniform *ad valorem* duty on all the manufactured products, rather than heavy selective duties in order to encourage the development of particular industries.⁷

5. External Economies Argument. Another argument for protection is that the establishment and development of every new industry yields benefits in the form of external economies. These external economies result in a divergence between private profit and social benefit. And when such divergence arises, a case can be made for import restrictions or subsidization in order to lessen this divergence. Scitovsky⁸ maintains that the concept of external economies in the context of industrialization of underdeveloped countries is used in connection with the social problem of allocating savings among alternative investment opportunities.

External economies are generally classified as "technological" and "pecuniary" external economies. They arise because of direct interdependence among the producers. "Technological external economies exist whenever the output of a firm depends not only on the factors of production utilized by this firm but also on the output and factor utilization of another firm or group of firms."⁹ These "technological external economies" affect the firm's output through changes in its production function. According to Scitovsky, "Pecuniary external economies are invoked whenever the profits of one producer are affected by the actions of other producers." He explains further that with an expansion in the capacity of an industry as a result of investment, prices of its products fall and the prices of the factors used by it rise: The lowering of product prices benefits their consumers and the rising of factor benefits their suppliers. When these benefits accrue

⁷D.T. Lakdawala, "Commercial Policy and Economic Growth" in *Trade Theory and Commercial Policy in Relation to Underdeveloped Countries*, (ed.) A K Dass Gupta, p 31, n 5

⁸Tibor Scitovsky, "Two Concepts of External Economies" in Aggarwal and Singh (ed.), *op. cit.*, pp. 295-303.

⁹J E Meade, "External Economies and Diseconomies in a Competitive Situation," *Economic Journal*, March 1952

to firms in the form of profits, they are pecuniary external economies.¹⁰

Its Limitations. The external economies argument has the following limitations: *First*, if production costs of firms in other industries are lowered as a result of expansion in the capacity of the protected industry, due to the emergence of technical or pecuniary external economies, 'the private profitability understates its social desirability in this situation.' As a result, the production of commodities will be less than optimal. In other words, investment decisions will be less than optimal, if investment in the protected industry increases the profitability of an another industry. Thus protection granted to a range of complementary industries is socially more profitable whereas in the case of isolated industries, it might be less profitable. As Seitzovsky emphasises, "Only if expansion in industries were integrated and planned together, would the profitability of investment in each one of them be a reliable index of social desirability?"¹¹ *Second*, Myrdal is of the view that greater external economies are realizable in the export as well as the import-competing industries.¹² *Third*, in reality, one must count only the net external economies—the external economies minus diseconomies—accruing to domestic nationals and leave out of account the pecuniary external economies accruing to foreign buyers from the expansion of export industries and the diseconomies inflicted on foreign competitors by the expansion of import competing industries. Accordingly, investment in export industries, concludes Seitzovsky, is always less and that in import competing industries, is always more desirable from the national point of view.

6. Factor Re-distribution Argument. It is contended that in an underdeveloped country the gap in prices and costs between agriculture and industry is so wide that it hampers the development of industry. This view was first of all put forth by M. Manoilescu¹³ who advocated protection for industry since industry was more productive than agriculture. Lewis¹⁴ and Myrdal have restated the argument in recent years.

In overpopulated underdeveloped countries, the money wages of labour in industry exceed the social cost of labour in alternative uses. Due to the existence of the extended family system and underemployment in the rural areas, wages tend to be low in agriculture and high in industry. An underemployed or unemployed worker in the rural area will not be prepared to accept a job in the town unless the wages offered

¹⁰Seitzovsky, *op. cit.*

¹¹*Ibid.*

¹²*Ibid.*, p. 227.

¹³M. Manoilescu, *Theory of Protection and International Trade*, 1931.

¹⁴W.A. Lewis, in Aggarwal and Singh, *op. cit.*

exceed his share of the family income. From the point of view of the society, the value of the worker's output is smaller than what he is prepared to accept in an alternative job in the town, since his marginal product is negligible or zero as he is underemployed or unemployed. Thus a policy of protecting industries is called for in order to compensate for this gap in money and social costs and also to provide viable employment opportunities for the surplus labour force. Myrdal states that in an underdeveloped country the span between wages in manufacturing industry and in agriculture tends to be particularly broad. This will hamper industry if it is not given protection to a corresponding degree. Moreover, the social costs for labour in industry are actually lower than money costs. And protection will compensate for this gap in labour costs between agriculture and industry.¹⁵ It is maintained that since agriculture is less productive than industry, real income can be raised by factor redistribution through a policy of protection.

Its Limitations. This argument is also not free from limitations. *First*, this argument is not cogent when applied to the problem of disguised unemployment existing in underdeveloped countries. If a portion of surplus working force (whose marginal productivity in agriculture is zero) is withdrawn from agriculture and gainfully employed in industry, it will raise the real income of the country. For this purpose industries are to be protected against foreign competition. *Second*, we have already discussed the various aspects of the problem of 'disguised unemployment.' Given that disguised unemployment does exist, should protection be given in order to transfer surplus labour force from agriculture to industry? Nurkse's solution to this problem is not through industrialization but by employing surplus labour in capital projects. The problem is not one of protecting industry but of stimulating labour mobility by removing the various social and institutional barriers. *Third*, this "superiority of industry" argument is, however, untenable in the context of economic growth. A country is poor not because of the agricultural bias of its economy but due to low agricultural productivity. In fact, for rapid economic growth agricultural development must keep pace with industrial development. Agricultural productivity should continue to increase in order to provide food to a growing population, to supply raw materials to expanding domestic industries, to earn more foreign exchange, and above all to accelerate the rate of capital formation. Too much emphasis on industry is, therefore, likely to adversely affect agriculture and exports. Thus primary production cannot be regarded as a cause of poverty. It is an

¹⁵ *Ibid.*

to get away from those with a doubtful future.¹⁷

This policy, in turn, necessitates the adoption of the following measures: (i) An essential precondition for the fulfilment of the export programme is the realization of the production targets set in the agricultural mineral and industrial sectors of the economy; (ii) Restraining the growth of domestic consumption of commodities through fiscal or other measures in order to create adequate export surplus; (iii) Maintenance of reasonable internal price stability; (iv) Modernisation of export-oriented industries; (v) Timely import of raw materials and capital equipments needed for the production of exportable goods and even supplying them at subsidized prices; (vi) Relaxation or removal of export restrictions on exportable goods; (vii) Provision of credit, insurance and transport facilities to exporters. In India, credit facilities to exporters are provided by the Reserve Bank of India, the State Bank of India, and the Refinance Corporation. Besides, there is the *Export Credit and Guarantee Corporation* which insures all export risks, furnishes guarantees to banks on behalf of the exporters for credit facilities and provides supplementary credit facilities for export promotion. While the Indian Railways provide cheap and preferential transport facilities; (viii) Tax concessions to exporters using imported raw materials, semi-processed goods or components in the manufacture of exportable commodities; (ix) Stabilisation of prices of exportable goods; (x) Measures for the introduction and enforcement of quality control and compulsory preshipment inspection of various exportable commodities. In India, the Export Inspection Council performs these twin functions; (xi) Establishment of a commercial intelligence service for the compilation and dissemination of information to guide exporters and foreign importing firms; (xii) Establishment of a trading company to represent business interests of exporters in foreign countries having branches in key centres of the world; (xiii) Promotion and participation in industrial and trade fairs abroad and to arrange visual commercial publicity for the purpose of export promotion; (xiv) Setting up export promotion councils for major export goods. In India there are Export Promotion Councils in the case of major exportable commodities which perform both advisory and executive functions. They have been set up to secure the active cooperation of growers, producers and exporters in the country's drive for export promotion. Some of the councils have opened regional centres at important places in India and abroad; (xv) Conclusion of bilateral trade agreements with developed countries; (xvi) Cooperation among developing countries in the sphere of foreign trade. Since most of the underdeveloped countries export almost similar

¹⁷G. Myrdal, op., cit., p. 854.

types of products, they enter into competition with one another which is detrimental to them. Nurkse, Myrdal and others have, therefore, suggested cooperation among them in the field of international trade. It may be cooperation in a particular region or the creation of a common market among countries of the same character. This is the only way to boost up the trade of underdeveloped countries by increasing their bargaining strength in the world market. "The Say's Law of Market, so to say, will have a wider application among various countries of the underdeveloped region than within one country itself. The supply of one country would meet the demand in the other, and vice versa."¹⁸

2. Import Substitution. Another important method to overcome the balance of payments difficulties has been the import substitution. The strategy is to cut down imports of consumer goods and produce them at home. As Myrdal has pointed out, "The danger on the foreign exchange front provides a reason for directing investments in industry towards production of commodities that are substitutes for imports."¹⁹ According to Hirschman, there are four impulses of import substituting industrialization. They are the balance of payments difficulties, wars, gradual growth of income, and deliberate development policy. The first leads to a bias in favour of non-essential industries and the last is likely to produce exactly the opposite bias. The two motivating forces of industrialization by import substitution in developing countries have been balance of payments difficulties and deliberate development policy. The measures which are adopted in pursuance of these two impulses are import duties, quotas and import of exchange surcharges and multiple exchange rates as price-protective devices, while tax exemptions and subsidies are used to reduce costs in import-competing industries. Import substitution necessarily begins with the manufacture of durable consumer goods at the final stages of production. The country imports many converting, assembling and mixing plants and turns out finished consumer goods that were previously imported and then moves on, more or less rapidly and successfully, to the higher stages of production—to intermediate goods and machinery through backward linkage effects.²⁰

Case for Import Substitution. The case for import substitution rests on the grounds that trade had operated historically as a mechanism of international inequality to the disadvantage of backward countries. They are, therefore, justified in adopting the strategy of industrializa-

¹⁸M S Khan, *India's Economic Development and International Economic Relations*, 2nd ed

¹⁹G. Myrdal, op. cit

²⁰A.O Hirschman, "The Political Economy of Import Substituting Industrialization in Latin America", *QJE*, February 1968

tion by import substitution for the purpose of achieving self-sufficiency in the long run and to save foreign exchange by substituting imports by home production.

The experience of advanced countries is also cited in support of import substitution. H.B. Chenery has shown on the basis of historical studies of some countries that not only the share of industrial output rises with development, but also the growth of industries based on import substitution accounts for a large production of the total rise in industrial production.²¹

One of the principal arguments for the policy of import substitution is that it avoids the uncertainties and risks involved in finding markets for the import substitution industries because when the imports are shut off, an already established market is secured for the new industries.

Another argument is based on the contention that the demand of a developing country for industrial imports increases much more rapidly than the foreign demand for its exports. Such countries export primary products which have a sluggish foreign demand and are therefore unable to import industrial products sufficiently in exchange for exports. Thus the need arises for producing industrial goods at home to meet the domestic demand.

Again, it is argued that import-substituting industrialization augments the rate of domestic savings and investment. When the state uses restrictive devices like tariffs, licences, quotas, etc., to protect import-substituting industries from foreign competition, the producers are able to raise the prices of their products and thus earn high profits. When these profits are saved and reinvested, development gains momentum. Moreover, it is argued that protection to import substitution industries will turn the terms of trade against the un-protected sectors and thus change the distribution of income in such a manner that savings and investment are encouraged in the economy.

Further, there is the employment argument in support of industrialization by import substitution. It is contended that import-substituting industrialization is necessary to provide gainful employment to the existing underemployed, to absorb surplus manpower arising from increases in agricultural productivity through the use of modern labour-saving techniques and to engage the growing labour force as population increases.

Another argument for import-substituting industrialization is from the point of view of the economic welfare of the underdeveloped country in the long run. If the policy of import-substitution is carried through substantial amounts of direct foreign investments, as is usually

²¹H.B. Chenery, "Patterns of Industrial Growth", *AERL*, September 1960.

the case, the country benefits from modern industrial techniques and know-how. By directly participating in the technological know-how of the advanced countries, it is in a position to accelerate its rate of capital accumulation.

Lastly, the ultimate aim of industrialization via import substitution is two-fold: (i) to achieve self-sufficiency in the production of finished consumer goods, intermediate goods and machinery, and (ii) to export them to developing and developed countries.

Case Against Import Substitution. The policy of import substitution being followed in India, Pakistan and in many Latin American countries has not been smooth. Rather, it has tended to disrupt the economies of underdeveloped countries thereby making their process of industrialization a costly one. Santiago Macario, a Latin American economist, writes in this connection that anxiety to relieve the chronic shortage of foreign exchange has induced many Latin American countries to pursue an industrialization policy essentially geared to import substitution; and that the substitution process has not been effected gradually, in accordance with a plan, and in anticipation of development requirements but in make-shift fashion, frequently to meet emergencies, and on the basis of excessive and indiscriminate protection. Consequently, in many instances it has been carried a good deal beyond the economically advisable limits, with the result that serious distortions have been introduced in the economic structure in the countries concerned and the development of more efficient and productive activities has been adversely affected to the special detriment of export possibilities.²² These observations equally apply to India, as will be shown later. We discuss arguments against import substitution in the light of merits of this policy as given above.

The principal objective of the policy of import substitution aimed at saving foreign exchange has been frustrated. The industries established have not been those that might have saved foreign exchange. In fact, the established industries have failed to produce any real savings, rather they have resulted in dissaving of foreign exchange. Underdeveloped countries lack in raw materials, intermediate goods and capital equipment to start import substitution industries. So the need for imports is much greater in this policy than otherwise. Thus, the direct savings of foreign exchange may be less than the indirect expenditure of foreign exchange on inputs and capital goods needed for import substitution industries. It may even lead to dissavings because the value of the inputs imported for the new industries may far exceed the value of goods replaced by domestic production.

²²S. Macano, "Protectionism and Industrialization in Latin America," *Bulletin for Latin America*, March 1965.

The historical evidence adduced by Chenery in support of industrialization via import substitution may not hold good in the case of all the developing countries. It is contended that the rise in industrial production has taken place through the growth of imports. The imports of raw materials, intermediate goods and capital equipment help in the establishment of the domestic industry in an underdeveloped country. In fact, the imports help in using the underemployed resources productively, in creating demand, and in encouraging entrepreneurial activities within the economy. It is the imports which ultimately pave the way for the establishment of import substituting industries by creating a base for them.

The argument that import substitution industrialization is essential to meet the domestic demand for industrial goods secured by shutting off imports overlooks the need for larger imports. According to Professor Hirschman, "The bulk of new industries in developing countries are in the consumer goods sector and as they are undertaken in accordance with known processes, on the basis of imported inputs and machines, industrialization via import substitution becomes a 'highly sequential', or 'tightly staged', affair."²³ The policy of import substitution thus creates demand for a variety of imports and defeats the purpose for which it is adopted. Moreover, the tendency for import substitution to create demand for further imports has important consequences. First, instead of reducing, it increases the economy's dependence on imports. Second, sometimes the economy may be unable to import raw materials, capital equipment and spares due to the shortage of foreign exchange or its insufficient allocation to imported materials and spares. Consequently, this leads to under-utilization of manufacturing capacity resulting in work stoppages, unemployment and fall in income. Third, import substitution has a tendency to shift the distribution of income in favour of the urban sector and the higher income groups, whose expenditure pattern typically has the highest component of imports which tends to increase further the demand for imports. Thus the extension of import substitution to a wider range of goods generates or increases the demand for further imports with bad effects on the economy.

John Power has argued that import substitution of finished consumer goods tends to lower rather than raise domestic savings and investment. The stress on the production of consumer goods for domestic use tends to raise their consumption and thus penalise exports and backward-linkage import substitution. Such a policy leads to adverse effects on economic and technical efficiency thereby reducing income, profits and

²³Ibid.

saving. John Power, therefore, advocates investment in capital goods and exports sectors rather than into the consumer goods sector to augment the rates of national income, saving and investment for further growth.²⁴

The argument that the establishment of import-substituting industries tends to absorb surplus labour in underdeveloped countries has not been borne out by facts. There is no denying the fact that import substitution expands output in the manufacturing sector but it has failed to create jobs for growing labour force in such countries. Griffin and Eros have shown that the growth of employment in manufacturing is not in the least comparable to the growth in output. In fact, employment seldom increases unless manufacturing output is growing by about 4 per cent per annum. Secondly, industrial employment grows less rapidly than the population.²⁵ For instance, over the period 1960-70 the average annual growth rate of output in Chile was 5.5 per cent while the growth rate of employment was 1.4 per cent. Similar was the case with Philippines where the growth rate of employment was only 2.1 per cent as against 6.7 per cent in output. This proves that industrialization via import substitution fails to create jobs so as to absorb redundant labour.

Further, the use of the strategy of import substitution as a means to achieve self-sufficiency in industrial production has led to malallocation of resources and a very bad effect on industrial productivity. In their enthusiasm to attain self-sufficiency, underdeveloped countries have resorted to indiscriminate protection for the development of inefficient and low priority industries. As a result, raw materials, intermediate goods and equipment obtained at a high cost have been misused. Thus such a policy has led to the establishment of inefficient industries with high production costs under extreme protection. This has been the experience of India in the field of import substitution. According to V.V. Desai, the self-sufficiency goal led to the impression that whatever substituted imports was good for the economy. As a result, substantial amounts of spare resources were used up in the production of such commodities as could be considered low priority consumption items. He estimated that the growth of such non-essential production resulted in the loss of potential savings to the tune of about Rs 800 crores during 1954-55 and 1963-64.²⁶ Further, this resulted in inadequate planning of the industrial structure and systematic under-estimation of the foreign exchange requirements of the programme for import substitution. It

²⁴J. Power, "Import Substitution as an Industrialization Strategy," *Philippines Economic Journal*, Vol V, no 2, 1966.

²⁵Planning Development, 1970.

²⁶V.V. Desai, "Import Substitution and Growth of Consumer Industries," *Economic and Political Weekly*, 15 March 1969.

also resulted in the need for foreign exchange exceeding availability, thereby forcing many industries to operate below capacity. He concludes that the misdirection of substantial investment into low priority industries and the ever growing foreign exchange requirements have failed to achieve the goal of self-sufficiency in the industrial sector through import substitution.²⁷ The same story has been repeated in the majority of Latin American countries.

Besides, according to Raul Prebisch,²⁸ excessive protectionism in such economies has generally insulated national markets from external competitions. This has tended to weaken and even destroy the incentive to improve the quality of their products and to lower costs. High cost of production has necessitated recourse to excessive protectionism. This has, in turn, adversely affected the industrial structure because it has encouraged the establishment of small uneconomic units, weakened the incentive to introduce modern techniques, and slowed down the rise in productivity. Thus a vicious circle has been created as regards exports of manufactured goods. These exports encounter great difficulties because internal costs are high because, among other reasons, the exports which would enlarge the markets are lacking. Thus import-substituting industrialization has failed to encourage exports of developing countries.

Conclusion. In conclusion, it seems that the policy of import substitution has failed to conserve foreign exchange. However, in certain cases it has intensified the shortage. The emphasis on import substitution on consumer goods has not been successful in increasing real output, saving and investment. It has failed to bring the economy anywhere near the goal of self-sufficiency in industrial production. Neither has it succeeded in creating sufficient employment opportunities to absorb the growing labour force, nor has there been the progressive growth of the export sector.

But countries like India which have established industries for the manufacture of sophisticated machinery and equipment have achieved significant progress in import substitution. It has helped the country lay reasonably good foundation for self-reliance in respect of the future investment programmes and defence capability. There has been spectacular achievement in respect of basic industries like iron and steel, crude petroleum and products, fertilisers, heavy chemicals, aluminium and a variety of machinery, besides a number of durable consumer goods like bicycles, fans, sewing machines which the country also

²⁷V.V. Desai, "Pursuit of Industrial Self-sufficiency," *Economic and Political Weekly*, 1 May 1971 and "Neglect of Implications of Self-sufficiency Goal," *Ibid.*, July 1971.

²⁸Towards a New Trade Policy for Development, 1964.

exports. India now produces about three-fourths of the capital equipment required for its development programmes through the policy of import substitution.

Export Promotion Vs Import Substitution

A pertinent question is: as between export promotion and import substitution which policy should be adopted by an underdeveloped country? Both policies have one common aim, i.e., to overcome balance of payments difficulties. We have discussed above the disadvantages of the policy of import substitution. Instead of saving foreign exchange, it has tended to increase the demand for imported machinery, parts and equipments. Extreme protection has led to the establishment of inefficient units with high production costs and sub-standard products thereby acting as severe handicaps for the growth of exports. The country is thus required to pay heavy price for industrialization via import substitution. Therefore, the policy of export promotion is called for. But "import substitution can be an effective instrument provided it can be done without creating over-protected, inefficient and high-cost industries.... On the other hand, an economy which lays stress on export development is likely to create conditions favourable for efficient production, because sustained growth of exports, involving international competition, calls for greater cost and quality consciousness."²⁹ For the purposes of discussion, let us divide the developing countries into two parts: (i) countries not suffering from acute population pressures; and (ii) overpopulated countries.

Countries in the first category should try to maintain and expand their traditional exports. They should make improvements in primary production by using more capital and better technology. They should replace such imports the production of which absorbs more labour relatively to capital. The process of import replacements should be gradual and in collaboration with foreign enterprises.

On the other hand, overpopulated countries like India should concentrate on manufactured products both for home consumption and export. This is essential because the markets for traditional exports of India like tea, jute manufactures, and cotton textiles have become either stagnant or have been expanding very slowly. Expenditure elasticity of demand for commodities like tea being constant, their exports are not likely to expand. Commodities like jute manufactures are losing their foreign market due to the development of synthetic materials. Even the market for cotton textiles is shrinking because of the

²⁹Pitambar Pant, "No Room for Complacence in Export Promotion," *Yojna*, 3, 1970.

development of man-made fibres like terylene. Another reason is stiff competition among the developing countries because every new country starts with cotton textile industry. Keeping these factors in view, it is imperative for developing countries to promote the exports of those durable consumer goods which are in great demand in the developed countries. Such commodities are cars, scooters, tape recorders, air-conditioners, refrigerators, TVs, cameras etc. The classical example is of Japan which has captured the Australian, New Zealand, American, and Canadian markets despite stiff competition from the domestic producers of these commodities. But the greatest handicaps in this field for developing countries like India are their high cost of production and low quality. So, for the purpose of developing the markets for such non-traditional items, developing economies should adopt export promotion measures enumerated in the earlier page.

But the exports of non-traditional items to the developed countries are beset with strong protective barriers which the developing countries will have to overcome. In this context, Harrod's advice merits consideration. He writes, "whatever the policies of the mature countries, developing countries should aim at expanding their output of exportable manufactures at prices so competitive as to be able to surmount the protective barriers of those countries."³⁰ The argument requires simultaneous establishment of intermediate goods and machinery industries which are dependent on the economies of scale. This refers to industrialization via import substitution in an intensive manner. Thus a developing country like India should combine the export promotion policy with intensive import substitution to overcome balance of payment difficulties and accelerate the pace of development.

CONCLUSION

Regulation of foreign trade is the fundamental principle of commercial policy. For, without a strict regulation of its foreign trade, an underdeveloped country cannot proceed on the road to economic development. Protection then becomes a necessity in order to increase the rate of capital formation, promote industrialization, and remove balance of payments disequilibrium. Opinions, however, differ whether underdeveloped countries should follow a restricted or a liberal trade policy. Myrdal is of the view that import restrictions in underdeveloped countries are simply a shift of import demands for some commodities to others and generally to goods needed for economic development. They

³⁰R. Harrod, "Economic Development and Asian Regional Cooperation," *Pakistan Development Review*, Spring, 1962.

do not imply a diminution of total imports. Their import restrictions and export subsidies do not, therefore, decrease total world trade.³¹ At another place he is more explicit when he says that the advice underdeveloped countries are now often gratuitously given to abstain from interfering with foreign trade is tantamount to giving up their development policy. A strict regulation of their foreign trade is a necessity but these regulations will not generally decrease world trade. He further believes that the underdeveloped countries have rational grounds for asking the developed countries to liberalise their trade unilaterally. They need to be staunch free traders, but preserve for

themselves a protective policy.³²

Another view is held by Meier and Baldwin who argue that protective commercial policy will interfere with the optimum pattern of world trade and may lead to uneconomic productive practices and inhibit the flow of foreign capital. A liberal trade policy, on the other hand, can be a vital force in determining the rate at which a country develops. Thus an underdeveloped country foregoing the benefits of international trade may only be perpetuating its poverty.³³ This argument is based upon the presumption that the adoption of a policy of protection necessarily paves the way to autarchy. But a well devised protective policy leads to the fuller utilization of idle resources so as to expand and diversify the economy, ultimately leading to the expansion of foreign trade.

If, however, an underdeveloped country were to choose between economic development and foreign trade, it will always choose the former. And commercial policy appears to be the easiest way to accelerate economic development. As Nurkse has said, "When it is a matter of stimulating employment, shutting off imports is a very simple method. When the problem is to collect taxes for the government revenue, tariffs are not difficult to establish and have been very popular in the less developed countries. When protection is wanted for certain industries restricting imports is again easier than raising funds with which to pay direct subsidies to the protected industries. Commercial policy is the line of least resistance in these cases, not the most efficient or equitable line. Similarly, commercial policy is easier than limiting domestic consumer demand in check by measures of, say, fiscal policy, but it does not go to the root of the problem. It is perhaps the only thing that can be done; the root of the problem may be insoluble."³⁴

³¹Ibid., p. 283

³²G. Myrdal, *Economic Theory and Underdeveloped Regions*.

³³Ibid., p. 409

³⁴Nurkse, op. cit., pp. 118-119.

Chapter 49

FOREIGN CAPITAL AND AID IN ECONOMIC DEVELOPMENT

TYPES OF FOREIGN CAPITAL

Foreign capital can enter a country in the form of private capital and/or public capital. Private foreign capital may take the form of direct and indirect investments.

Direct investment means that the concerns of the investing country exercise *de facto* or *de jure* control over the assets created in the capital importing country by means of that investment. Direct investments may take many forms: The formation in the capital importing country of a subsidiary of a company of the investing country; the formation of a concern in which a company of the investing country has a majority holding; the formation in the capital importing country of a company financed exclusively by the present concern situated in the investing country; setting up a corporation in the investing country for the specific purpose of operating in the other concerns; or the creation of fixed assets in the other country by the nationals of the investing country. Such companies or concerns are known as transnational corporations (TNCs) or multinational corporations (MNCs).

Indirect investment better known as 'portfolio' or 'rentier' investment consists mainly of the holding of transferable securities (issued or guaranteed by the government of the capital importing country), shares or debentures by the nationals of some other country. Such holdings do not amount to a right to control the company. The shareholders are entitled to the dividend only. In recent years, multilateral indirect investments have been evolved. The nationals of a country purchase the bonds of the World Bank floated for financing a particular project in some LDC.

Public foreign capital may consist of: (a) 'Bilateral hard loans' i.e., giving of loans by the British Government in pounds sterling to the Indian Government; (b) 'Bilateral soft loans' i.e., sale of foodgrains and other farm products to India by the United States under PL 480*; (c)

*Under the US Agricultural Trade Development Assistance Act popularly known as Public Law 480, agricultural surpluses are sold for payment in local currency.

'Multilateral loans' i.e., contributions to the Aid India Club, the Colombo Plan, etc., by the member countries. Under this category are also included loans made available by the various agencies of the United Nations like the IBRD, IFC, IDA, SUNFED, UNDP, etc.¹ (d) Intergovernmental grants. *Foreign Aid* refers to public foreign capital on hard and soft terms, in cash or kind, and intergovernmental grants.

ROLE OF FOREIGN AID*

Public foreign capital is more important for accelerating economic development than private foreign capital. The financial needs of LDCs are so great that *private foreign investment* can only partially solve the problem of financing. For one thing, it has nothing to do with social expenditures, in such spheres as education, public health, medical programmes, technical training and research, etc. Such schemes though indirectly contributing to economic efficiency and productivity of the economy in the long-run yield no direct returns, and could, therefore, be financed with the help of grants received from advanced countries. Further, private foreign investment presupposes the existence of basic public services in LDCs. But investment in them requires large sums and risks which private capital is unable to undertake. So investment in low-yielding and slow-yielding projects could be possible only on the basis of foreign aid. Moreover, unlike private foreign investment, aid can be used by the recipient country in accordance with its development programmes. Therefore, much cannot be expected of private foreign investment.

There is, however, a growing international awareness that 'poverty anywhere is a danger to prosperity everywhere and prosperity anywhere must be shared everywhere.' Developed countries consider it to be their moral duty to help their less fortunate brethren in underdeveloped countries. But this realization on the part of the developed countries has never been spontaneous. They have always been motivated by international policies in the context of the cold war. Their aim has been to give aid with "strings" attached. "It was only with the entry of the Soviet Union and other communist countries into the field that western countries also began displaying some enthusiasm for offering aid to the

¹These abbreviations stand for. The International Bank for Reconstruction and Development (IBRD), International Finance Corporation (IFC) International Development Association (IDA), Special United Nations Fund for Economic Development (SUNFED), United Nations Development Programme (UNDP)

*This also relates to the Role of Foreign Capital in Economic Development

underdeveloped countries at the governmental level without strings.”²

Foreign aid flows to the LDCs in the form of loans, assistance and outright grants from various governmental and international organizations. It is regarded indispensable for the development of LDCs. But there are some economists who dispute this view and hold that foreign aid is not indispensable for their development rather it obstructs it. We study the case for and against foreign aid.

Case for Foreign Aid

LDCs are characterized as “capital-poor” or “low-saving and low-investing” economies. There is not only an extremely small capital stock but current rate of capital formation is also very low. On an average, gross investment is only 5 to 6 per cent of gross national income in these economies, whereas in advanced countries it is about 15 to 20 per cent. Such a low rate of saving is hardly enough to provide for a rapidly growing population at the rate of 2 to 2.5 per cent per annum, let alone invest in new capital projects. In fact, at the existing rate of saving, they can hardly cover depreciation of capital and even replace existing capital equipment. Efforts to mobilise domestic savings through taxation and public borrowing are barely sufficient to raise the current rate of capital formation via investment. Rather, these measures lead to reduction in consumption standards, and unbearable hardships on the people. The importation of foreign capital helps reduce the shortage of domestic savings through the inflow of capital equipment and raw materials thereby raising the marginal rate of capital formation.

Besides, low-saving and low-investment imply capital deficiency, and along with it LDCs suffer from technological backwardness. Technological backwardness is reflected in high average cost of production and low productivity of labour and capital due to unskilled labour and obsolete capital equipment. Above all, it is reflected in high capital-output ratio. Foreign capital overcomes not only capital deficiency but also technological backwardness. It brings sufficient physical and financial capital along with technical know-how, skilled personnel, organizational experience, market information, advanced production techniques, innovations in products, etc. It also trains local labour in new skills. All this accelerates economic development.

²V.K.R.V. Rao and Dharam Narain, *op. cit.*, p. 72. As a contrast, note what an American economist says in this respect. Professor Kindleberger opines that the underdeveloped countries now have expectations of assistance in their development. The expectations have been aroused. The United States, at least, among the developed countries, is committed to some form of economic assistance to the development programmes of the so-called free world. No such expectations have been awakened in the Soviet Union (after 1946) or in Red China.” *Ibid.*, pp. 298-99.

LDCs woefully lack in economic overhead capital which directly facilitates more investment. The rails, roads, canals, and power projects provide the necessary infrastructure for development. But since they require very large capital investment and have long gestation periods, such countries are unable to undertake them without foreign aid.

Similarly, LDCs are not in a position to start basic and key industries by themselves. It is again through foreign capital that they can establish steel, machine tools, heavy electrical, and chemical plants, etc. Moreover, the use of foreign capital in one industry may encourage local enterprise by reducing costs in other industries which may lead to chain expansion of other related industries. Thus foreign capital helps in industrializing the economy.

Further, private enterprise in LDCs is reluctant to undertake risky ventures, like the exploitation of untapped natural resources and the exploitation of new areas. Foreign aid assumes all risks and losses that go with the pioneering stage. Thus it opens up inaccessible areas, taps new resources, and helps in augmenting the natural resources of the country, and removing regional imbalances.

As a corollary to what is indicated above, we may say that the creation of the country's infrastructure, the establishment of new industries, the tapping of new resources, the opening of new areas, all tend to increase employment opportunities within the economy. In other words, the importation of capital creates more employment in the urban sector. This leads to the migration of surplus labour from the rural to the urban sector. The pressure of population on land is reduced and disguised unemployment may disappear. This is the social gain from aid.

All this implies that foreign aid tends to raise the levels of national productivity, income and employment which, in turn, lead to higher real wages for labour, lower prices for consumers and rise in their standard of living. When with the inflow of foreign capital local labour becomes skilled, its marginal productivity is increased thereby raising total real wages of labour. Secondly, when new industries are started by importing superior know-how, management, machines and equipment, larger quantities of new and quality products are available to consumers at lower prices.

The appearance of inflationary pressures is inevitable in a developing country because of the existence of the disequilibrium between demand and supply of domestic products, following the initiation of a large public investment programme. The latter has the impact of rapidly increasing the demand for goods and services relative to their supplies. This leads to inflationary pressures which become strong due to the existence of structural rigidities that inhibit the expansion of food

other consumer goods. Foreign aid helps minimise such inflationary pressures when food and other essential consumer goods through foreign aid raises the levels of consumption which, in turn, enhance the productive efficiency of the community.

Lastly, foreign aid overcomes the balance of payments difficulties experienced by an LDC in the process of development. To accelerate the rate of development it needs to import capital goods, components, raw materials, technical know-how, etc. Besides, its import requirements of foodgrains increase rapidly with population pressures. But its exports to developed countries are either stagnant or have a tendency to decline. The gap between imports and exports leads to the balance of payments difficulties. It is through foreign capital that an underdeveloped country can meet all its import requirements, and at the same time, avoid the balance of payments difficulties. Further, there is the need for additional foreign exchange for servicing external debt. This accentuates the balance of payments problems which can again be remedied by importing capital.

To conclude, the inflow of foreign capital is indispensable for accelerating economic development. It helps in industrialization, in building up economic overhead capital, and in creating larger employment opportunities. Foreign aid not only brings money and machines but also technical know-how. It opens up inaccessible areas and exploits untapped and new resources. Risks and losses in the pioneering stage also go with foreign capital. Further, it encourages local enterprise to collaborate with foreign enterprise. It obviates the balance of payments problem and minimises the inflationary pressures. Foreign aid helps in modernising society and strengthens both the private and public sectors. Foreign aid is thus indispensable for the economic development of LDCs.

Case Against Foreign Aid

Professor Bauer is one of the few western economists who does not view foreign aid as indispensable for the economic development of LDCs. To him, "Foreign aid is plainly neither a generally necessary nor a sufficient condition for emergence from poverty." It is not necessary for economic development because a number of new developed countries began as underdeveloped and developed without foreign aid. Moreover, many LDCs in the Far East, South-East Asia, East and West Africa, and Latin America have advanced very rapidly over the last half century or so without foreign aid. Nor is foreign aid a sufficient condition for economic development if the population of a country is not interested in materials development. "But if the main springs of development are present, material progress will occur even without

foreign aid. If they are absent, it will not occur even with foreign aid. It is of course true that a country receiving aid benefits in the sense of obtaining cheap or free capital..., but this in no sense makes foreign aid indispensable for development."

Foreign aid is often used for extremely wasteful projects which make large losses year after year. They absorb more local resources of greater value than their net output when the costs of administration, maintenance and replacement of fixed assets originally donated for the projects are taken into consideration.

Foreign aid does not always bring about an increase in net investment. As a matter of fact, all LDCs receiving foreign aid impose severe restrictions on the inflow and use of foreign capital. These retard the operation and expansion of private enterprise within the economy. Consequently, both foreign and domestic private enterprises are forced to work below capacity. Thus foreign aid may reduce rather than increase net investment within the recipient country.

Foreign aid has failed to improve the income-earning capacity of LDCs and they are now saddled with large external public debts. For instance, the external public debt outstanding in 1982 was \$ 50,412 million for Mexico, \$ 47,589 million for Brazil, and \$ 19,487 million for India.

The case for foreign aid to overcome balance of payments difficulties and to avoid inflationary pressures is misconceived. Foreign aid encourages governments of LDCs to embark on ambitious plans involving large expenditures financed by inflationary monetary and fiscal policies and also to run down their foreign exchange reserves. But inflationary policies, balance of payments difficulties and extensive economic controls engender a widespread feeling of insecurity or even a crisis atmosphere. All these inhibit domestic savings and investment and even lead to a flight of capital. These, in turn, serve as arguments for further foreign aid.

Further, foreign aid frequently influences policies into inappropriate directions by promoting unsuitable external models, such as Western-type universities whose graduates cannot get jobs, Western-style trade unions which are only vehicles for the self-advancement of politicians, and a Western pattern of industry even where it is quite inappropriate such as airlines and steel plants.

It is contended that foreign aid helps in increasing food, raw materials for exports and producing import substitutes. But the experience of many LDCs has been that much aid directly or indirectly finances

¹The discussion primarily follows P.T. Bauer, *op. cit.* Ch. 2, and "Foreign Aid Forever?" *Encounter*, March 1974.

uneconomic enterprises or activities which produce neither food nor raw materials for exports nor import substitutes.

Foreign aid often politicises public life in LDCs and thereby contributes to social and political tensions which ultimately retard material progress. It is on the basis of political pressures that many recipient governments in LDCs restrict the activities of highly productive and economically successful minorities such as Chinese in Indonesia, Asians in Africa, Indians in Burma, Europeans everywhere. Many maltreat and persecute politically ineffective minority groups, especially ethnic minorities. Such policies reduce current and prospective saving, investment and income in such LDCs.

Above all, foreign aid leads to dependency because the donors insist on aid-tying to the purchase of goods and services at costs much higher than the competitive world prices, and on monetary and fiscal policies detrimental to the national interests of the recipients of aid. For instance, the recipient may be required to keep an overvalued exchange rate, low real interest rates and to neglect export promotion and fiscal restraint.

Griffin and Enos⁴ have concluded on the basis of statistical evidence for thirty-two LDCs that only 25 per cent of foreign aid results in an increase of imports and investment, while 75 per cent is used for consumption. Thus aid causes a reduction in domestic savings. It is used as a substitute for domestic savings rather than as a supplement. Critics, however, doubt the validity of this statistical study because of statistical problems relating to sampling, too short a time period involved, non-availability of savings data in LDCs, etc. Moreover, a number of exogenous factors like wars, weather, terms of trade, etc., and endogenous factors such as economic and political difficulties cause high inflow of aid and low saving rates. It is, therefore, not possible to generalise the impact of foreign aid. Empirical evidence has shown that in some countries, aid stimulates savings so that each dollar of inflow results in more than one dollar of investment, while in some other countries they discourage savings and a dollar of aid inflow leads to much less than a dollar of investment.⁵

TIED VS. UNTIED AID

Distinction is often made between tied and untied aid. Aid may be tied

⁴K.B. Griffin and J.L. Enos, "Foreign Assistance: Objectives and Consequences," *Economic Development and Cultural Change*, April 1970.

⁵Guster Papanek, "The Effect of Aid and Other Resource Transfers on Savings and Growth in Less Developed Countries," *E.J.*, September 1972.

by source, project and commodities, or it may be tied both by project and source, and become double tying aid. Untied aid is a 'general-purpose aid' and is also known as programme aid or non-project aid. We discuss them in the light of the Indian experience.

Tied Aid. Aid-tying by source is followed by the US Government in giving assistance under PL 480 and Exim Bank loans, and by Britain and Federal Republic of Germany. The US aid programme requires the recipients to spend the aid on US goods and services. All credits are automatically linked to US exports. Any departure from this tying by source means discontinuance of aid. Another method is to treat the aid-flow as part of an over-all trade arrangement, as is done by the Socialist countries. Still another method is to finance only those commodities and/or projects where the donor country possesses a decided advantage in tendering the specified items. This practice is followed by the Federal Republic of Germany.⁶

It has been estimated that aid-tying by source tends to push up the cost of the projects by more than 30 per cent to the recipient country. Double-tying increases the cost of aid procurement still further. This is obvious from the fact that the aid receiving country is required to pay more than the competitive world market price for its requirements to the donor country. It increases further when as in the case of American supplies, the recipient country is forced to get machinery, spare parts, raw materials, etc., in the ships of the donor country. This tends to reduce the real value of aid. Besides, aid-tying by source distorts the recipient country's allocation of investment resources. The development programme becomes biased towards these projects that have a high component of the special import content allowed for under the conditions of tied aid. Aid-tying by source also limits the choice of technology used in investment projects and may force the recipient country to adopt a highly capital-intensive technique or project which may be inappropriate to a labour surplus economy.

Project aid has been defined "as assistance whose disbursement is tied to capital investment in a separable productive activity."⁷ The entire Soviet aid to India has been of this nature. According to Alan Carlin, the project approach to aid has a number of advantages both from the donor's and the recipient's viewpoint: (i) direct control by the recipient over the selection of projects in certain circumstances; (ii) greater opportunity of influencing, in both their design and implementation, those projects normally financed by donor; (iii) increased ease of

⁶Bhagwati, "The Tying of Aid," in *Foreign Aid*, (eds.) J. Bhagwati and R. S. Eckaus

⁷Alan Carlin "Projects Versus Programme Aid From the Donor's Viewpoint", *Economic Journal*, March 1967.

influencing the recipient's policies in those sectors of the recipient's economy for which project aid has been made available; (iv) incentive for improving the quantity and quality of projects; (v) better opportunities for publishing the donor's aid programmes; (vi) increased access to information on sectors of the recipient's economy in which projects are financed; and (vii) less adverse effect on the balance of payments of the donor when project aid is combined with source-tying.

Project aid has, however, certain disadvantages. Project aid may not be useful to the recipient country, if there is a squeeze on maintenance imports. Further, any attempt to exercise micro or project influence by the donor country will make such aid less attractive to the recipient. Moreover, project aid leads to inter-governmental bureaucratic frictions created by detailed supervision of project formulation and execution. Aid tied to specific projects also tends to distort the investment priorities of the recipient country which may have to postpone other equally important projects. Often, excessive aid tying to particular machinery, equipment, etc., leads to the underutilization of domestic resources like labour because it creates a bias towards import-intensive projects.⁸ Last but not the least, like aid-tying by source, project aid increases the real costs of loans to the recipient country when she has to buy machinery, and spares from the aid-giving country at a high price. According to Jagdish Bhagwati, it amounts to one-fifth of the total tied aid and in specific cases price differentials amount to 100 per cent or even more.

Untied Aid. Untied or *programme* aid has been defined by Carlin as that "assistance whose disbursement is tied to the recipient's expenditures on a wide variety of items justified in terms of the total needs and development plan of the country rather than any particular project." India receives non-project aid from the UK, and the Federal Republic of Germany in the form of balance of payments assistance, debt relief assistance and for the imports of raw materials, components and spares. Naturally such aid is preferred to tied aid by developing countries because they are free to utilize aid in accordance with their development programmes—in agriculture, industry, transport, and/or in any other infrastructure. Programme aid also reduces the real costs of aid as the recipient can buy its requirements at competitive rates from the world markets and there are no interbureaucratic frictions as under tied aid. Further, the recipient country can use an appropriate technology in keeping with its factor endowments and allocate its resources in a much better way than under tied aid. Lastly, as pointed out by Professor Singer, 'Plan aid seems to be more popular among the receiving

⁸IMD, Little and J.M. Clifford, International Aid, 1985.

countries than project aid. This would be expected to be considered as an advantage of plan aid, since it may spur the receiving country to greater efforts in order to get the aid, apart from smoothing relations between the aid-giver and the receiver, which is presumably also an objective of aid....It may be said that aid tied to specific projects is an inducement for receiving countries to think of development in terms of concrete projects....Development is, of course, much more than that, and in fact many expenditures classified as current or as consumption are much more developmental than expenditures classified as "projects" or capital expenditure. From this latter point of view, plan aid, and even more annual budget aid, is clearly preferable if the donor agrees with the recipient on developmental policies and priorities."⁹

Factors Determining the Amount of Foreign Aid for Economic Development

The amount of foreign aid flowing to LDCs, however, depends upon a number of factors. The first is the availability of funds. Developed countries should have enough surplus capital to export. There does not appear to be a plethora of surplus in such countries. With the exception of the United States, there are very few countries that can spare so much capital as to bring it up to 10-15 billion dollars annually, required by LDCs. Some of the developed countries like Canada and Australia themselves borrow from the United States and Great Britain to finance their development projects. However, a genuine effort on the part of rich countries to mop up surplus capital can meet the requirements of LDCs.

The second factor is the absorptive capacity of the recipient country. LDCs should get as much as they could usefully invest. Absorptive capacity covers all the ways in which the ability to plan and execute development projects, to change the structure of the economy, and to reallocate resources is circumscribed by the lack of crucial factors, by institutional problems or by unsuitable organization. The structure of the economy along with the utilization of its existing capacity will have an important bearing on a country's absorptive capacity.¹⁰ The International Bank for Reconstruction and Development stated in its Fourth Annual Report: "The principal limitation upon Bank financing in the development field has not been lack of money but lack of well-prepared and well-planned projects ready for immediate execution. The projects must not only be built, to be "absorbed", they must

⁹H.W. Singer, "External Aid For Plans or Projects", *Economic Journal*, September, 1965

¹⁰J H Adler, *Absorptive Capacity: The Concept and Its Determinants*, 1

be productive." The amount of capital that can be utilized by an LDC is determined by the availability of complementary resources. It will remain unutilized if complementary resources are not available. Inadequacy of overhead facilities like power, transport, etc., in LDCs keep the capacity to absorb foreign aid low. The other factors which keep the absorptive capacity for productive investment low are the lack of efficient entrepreneurship, administrative and institutional bottlenecks, the lack of trained personnel, the lack of geographic and occupational mobility, and the small size of the domestic market. These handicaps keep the marginal productivity of capital low in LDCs and prevent the proper use of foreign aid for the execution and completion of development projects. Once these obstacles are overcome the absorptive capacity increases, the economy would complete the projects well in time and the pace of development would be accelerated. In order to increase their absorptive capacity, the LDCs should, therefore, undertake appropriate and adequate preinvestment projects. In this, they can take advantage of the help being extended by such international agencies as the UN Special Fund. Above all, 'for an effective use of foreign aid, it should increasingly be linked with programmes rather than projects. This would eliminate delay in the utilization of authorized aid and increase the tempo as well as magnitude of utilization.'¹¹ Higgins lists the following factors as evidence of the absorptive capacity of a country: unutilized capacity of some kind; opportunities for improvements in technology; a well-construed development plan; some domestic financial resources; public and business administrators capable of executing projects expeditiously and efficiently; a strong and united government having the support of the masses; a fluid and flexible society already undergoing cultural change and willing to shift from agricultural to industrial occupations; a high level of literacy and an effective system of education, and a technology-minded and development-minded public.¹² Given these factors the capacity to absorb external resources for productive investment is high.

The third factor is the *availability of resources*. If an LDC has little adequately developed human and natural resources it will act as an impediment to the effective use of foreign capital. It will be all the more difficult for such a country to utilize the available foreign aid if it lacks in human and natural resources. But the latter should not act as limits to economic development.

The fourth factor is the *capacity of the recipient country to repay*. This is a very pertinent problem. For the burden of servicing loans acts

¹¹V.K.R.V. Rao and Dharam Narain, *op. cit.*

as a barrier to the borrowing of large funds by LDCs. This, in itself, can be attributed to their extreme poverty. The capacity for repayment, however, hinges on their capacity to export and their ability to augment their foreign exchange resources. V.K.R.V. Rao and Dharam Narain point out that, in the short run, the capacity to repay is dictated by the foreign exchange impact or the investment undertaken, whether it be export-increasing or import-decreasing. "Overtime, the only determinant of the capacity to repay is the loan's contribution to productivity of the economy as a whole, and the capacities of the system to skim off the necessary portion of that productivity in taxes or pricing, and reallocate resources so as to transfer debt service abroad. The requirement for payment is that the fiscal system raise the necessary funds, and the transformation occur to shift resources into export increasing or import-decreasing lines."¹³ If loans flow in a steady and increasing stream and for very long periods with liberal terms of repayment, the problem of repayment is easy. For, in a very long period, the borrowing countries would have raised their outputs to such an extent as to permit net repayment. But prudence demands that loans should be tied to self-liquidating works, while grants should be made available for specific social overheads, such as research, education, public health, and community development.

Lastly, perhaps the most important factor is the will and the effort on the part of the recipient country to develop. Capital received from abroad does not fructify, unless it is desired and paralleled by an effort on the part of the recipient country. As Nurkse aptly said, "Capital is made at home." The role of foreign capital is to act as an effective agent for the mobilization of a country's will.

Aid or Trade

Of late, the idea has been gaining ground among the LDCs that trade and not aid is essential for their rapid development. It is contended that the developed countries have failed to meet the aid requirements of the developing economies during the development decades of the 1970s and 1980s. A UNCTAD resolution adopted by a large majority of the developed countries had, in a way, made it obligatory on them to annually contribute to LDCs at least one per cent of their national income net after deducting withdrawals of external capital including amortisation and repayment. But they failed to contribute even 0.5 per cent of their national income. This has been especially disheartening when the capacity to absorb more aid has been expanding on the part of the developing nations and their economic performance through aid has

¹³R. Nurkse, *op. cit.*

also improved much. Gerald M. Meier has aptly observed that "the flow of foreign capital from developed countries to LDCs has levelled off, and the external debt servicing problem has intensified; the import surplus supported by foreign capital has, therefore, fallen markedly in recent years, and the net transfer of resources beyond imports based on exports has become relatively insignificant for the majority of LDCs. To the extent this foreign exchange constraint is not removed, an LDC cannot fulfil the import requirements of its development programme. The LDC must then undertake policies that will do one or a combination of the following: reduce the country's rate of development, replace imports, expand exports, improve the country's terms of trade, induce a larger inflow of foreign aid."¹⁴

A larger inflow of foreign aid is neither feasible nor desirable for the LDCs. Foreign aid has undoubtedly provided crucial support to the development plans of such countries, but the developed countries are not prepared to supply aid to the extent required by the less developed. On the other hand, the LDCs are not anxious to have tied aid at the strict conditions laid down by the donors.¹⁵ Prior to the meeting of UNCTAD I in 1964, the policy of import substitution was much favoured by the LDCs but it failed to solve their problems. Since then, the various UNCTAD conferences have stressed the outward-looking policies of export promotion and improvement in the terms of trade for the LDCs. The UNCTAD has been pleading for preferential tariffs for the manufactured and semi-manufactured exports of the LDCs and UNCTAD III succeeded in evolving the Generalised Systems of Preferences (GSP) whereby concessions have been extended to the products of the 88 LDCs to penetrate the markets of the OECD (Organization for Economic Cooperation and Development) nations.¹⁶

So India and other developing countries should make tremendous efforts to boost their exports so that in a decade or so they have a trade surplus. Expansion of exports is also essential to pay for the increasing imports. Larger exports are further needed for debt service payments. The Tandon Committee¹⁷ has suggested an export target of Rs 17,968 crores for 1990-91 against the estimated level of Rs 7,000 crores in 1980-81. This will mean a growth rate of 10 per cent annually. This projected level of growth could only be achieved by "vigorous policies." This is expected to increase the country's share in world trade from 0.5 per cent to one per cent by 1990-91.

¹⁴G.M. Meier, *Leading Issues in Economic Development*, 2nd ed., 1970.

¹⁵Refer to the previous section for demerits of tied aid.

¹⁶It was formed on 14 December 1970 by developed countries at Paris and includes all European countries, US, Canada and Japan.

¹⁷*The Economic Times*, May 15, 1980.

But a policy that favours trade end not aid can be successful only if there is an increase in domestic savings equal to the rise in export earnings. Trade will substitute for aid when larger export earnings raise national income and this leads to increased savings. In fact, greater trade opportunities are like greater aid flows. Trade helps in transferring real resources for investment when the LDCs are able to charge higher prices for their exports from the developed countries under preferential trading agreements. Developing countries at a higher level of development like India, Brazil, etc., are able to utilize their export earnings for further capital formation but no developed country would be prepared to buy at prices higher than the world market. So the need is to stabilise the price level in developing economies and then trade can substitute aid admirably.

However, countries that are in the early phase of development should not think of substituting trade for aid because they can only develop their trade through aid over the long run. Although greater trade possibilities for such countries have some resource element in them, they are more complementary to aid flows than substitutable for them. Development requires both trade and aid.

Chapter 50

TWO-GAP MODEL AND COSTS BENEFITS OF FOREIGN AID

TWO-GAP MODEL

Hollis Chenery and other writers¹ have put forth the "two-gap" approach to economic development. The idea is that "savings gap" and "foreign exchange gap" are two separate and independent constraints on the attainment of a target rate of growth in LDCs. Chenery sees foreign aid as a way of filling these two gaps in order to achieve the target growth rate of the economy.

To calculate the size of gaps, a target growth rate of the economy is postulated along with a given capital-output ratio. A savings gap arises when the domestic savings rate is less than the investment required to achieve the target. For example, if the growth target of national real income is 6 per cent per annum, and the capital-output ratio is 3:1, then the economy must save 18 per cent of its national income to achieve this growth target.² If only 12 per cent of savings can be mobilised domestically, the savings gap is 6 per cent of national income. The economy can achieve the target growth rate by filling this savings gap with foreign aid. Similarly, a fixed relationship is postulated between targeted foreign exchange requirements and net export earnings. If net export earnings fall short of foreign exchange requirements, a foreign exchange gap appears which can be filled by foreign aid.

The two gaps are explained in terms of the national income accounting identities:

$$E - Y \equiv I - S \equiv M - X \equiv F$$

where E is national expenditure, Y is national output and income, I is investment, S is saving, M represents imports, X exports and F is net capital inflow.

¹H. Chenery and A. Strout, "Foreign Assistant and Economic Development," *AER*, Vol. 56, September 1956; H. Chenery and M. Bruno, "Development Alternatives in an Open Economy," *EJ*, Vol. 72, March 1962; and H. Chenery and I. Adelman, "Foreign Aid and Economic Development," *RES*, Vol. 48, Feb. 1966.

²This is calculated in terms of Harrod's formula: $Gw = s/Cr$.

($I-S$) is the domestic savings gap and ($M-X$) is the foreign exchange gap. Like the basic national income accounting identities, the two gaps are always equal ex-post in any given accounting period. But they may differ ex-ante because in the long run those who make decisions about savings, investment, exports and imports are different people. So during the planning process, the plans of savers, investors, importers and exporters are likely to be different. Ex-ante (or planned) investment is related to the target growth rate of the economy. If the target growth rate is high, investment will also be high. But domestic savings depend upon the level and distribution of income in the society. Ex-ante imports include the imported inputs needed for development. They are also affected by the size of the national income and the distribution of income among the public and the different sectors of the economy. Exports are exogenously determined by world prices and by quantities that change with weather or natural conditions. As these elements are assumed to be independent of each other, the savings gap and the foreign exchange gap are unequal in size in the ex-ante sense. It is also assumed that savings and foreign exchange cannot be substituted for each other. Further, the country cannot transform its potential savings into exports.

Given these assumptions, Figure 50.1 illustrates the two ex-ante gaps and their relation to different target growth rates of income. The ex-ante savings and foreign exchange gaps, are measured along the vertical axis and the target growth rates along the horizontal axis. The ex-ante savings gap is represented by ($I-S$) curve and the ex-ante foreign exchange gap by ($M-X$) curve. Both are equal at point E and the target growth rate of OG is achieved with OF inflow of net foreign aid. If the target growth rate is OG_1 , then the foreign exchange gap is larger than the savings gap by ab . This growth rate will not be achieved because the inflow of foreign capital is not sufficient to fill the larger foreign exchange gap OF_1 . Short run forces might bring about the ex-post equality of the two gaps without achieving the target growth rate. On the other hand, if the target growth rate is OG_2 , the savings gap is larger than the foreign exchange gap by cd . Again, this growth rate will not be achieved because the inflow of foreign capital is inadequate to fill the savings gap. It requires a larger inflow of foreign capital to meet the larger savings gap OF_2 . Imports cannot be reduced

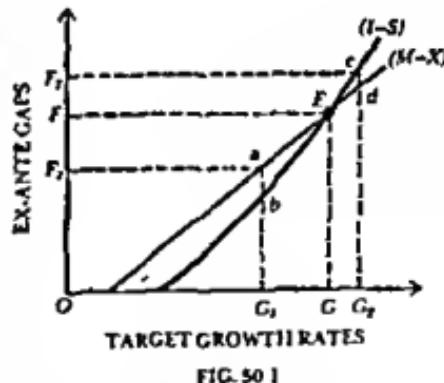


FIG. 50.1

due to "the nature and limited flexibility of the productive system and of the composition of consumer demand." To overcome these structural rigidities, Chenery suggests restrictions on the pattern of consumption, the distribution of income, the level and growth of employment and changes in the exchange rate. Such measures can bring adjustments in the two gaps without foreign aid. But they will retard growth.

Some economists are of the view that if prices are flexible, such rigidities are not likely to be found. If resources are optimally allocated, there can be only savings constraint on growth and hence only savings gap in the economy. If appropriate exchange rate policies or price policies are followed, resources would shift to remove the difference between the growth effect of imports and domestic savings and hence the difference in the ex-ante gaps. This view holds that if the foreign exchange gap is dominant, it must be due to inappropriate price policies which might have led to malallocation of resources.

Assuming that all capital goods are imported and only consumer goods are produced domestically, another two-gap model holds that structural rigidities imply that (i) no substitution is possible between imported capital goods and domestic factors in production, and (ii) no substitution is possible between different consumer goods in consumption.

The foreign aid required to fill the gap is determined by the dominant gap at a given point in time. If the savings gap is larger than the foreign exchange gap, the economy is said to be in a savings constraint. On the other hand, if the foreign exchange gap is larger than the savings gap, the economy is in a foreign exchange constraint. Foreign aid can help in removing the savings constraint by the inflow of capital. Over the long run, the amount of foreign aid required will equal the difference between the increase in investment and the increase in savings generated by rising income. When the savings gap disappears the target growth rate of the economy will be sustained.

If the foreign exchange constraint is dominant or binding for an LDC at any given point in time, foreign aid can help in overcoming it with foreign aid. The country can start new investment projects by importing capital and intermediate goods and technical assistance. Over the long period, the required foreign aid will equal the difference between the increase in imports and exports. The foreign exchange gap will disappear when exports rise to a level which covers the required imports for the target growth rate of the economy.

Of the two gaps, which dominates first in LDCs, Chenery and Strout cite empirical evidence to show that first such countries have a dominant savings constraint and then the foreign exchange constraint over their course of development. In fact, they divide countries having savings

constraint and foreign exchange constraint in two separate categories.

A Critical Appraisal

The two-gap analysis is based on certain restrictive assumptions which limit its usefulness in achieving the target growth rate in LDCs. It presupposes that an increase in domestic savings cannot be utilised as a substitute for the required foreign exchange to maintain investment for the target growth rate. It further assumes that the country cannot follow export promotion and import substitution policies. It also assumes structural rigidities and non-substitutability between different types of goods. Given such rigidities, if the foreign exchange gap is larger than the savings gap, the domestic saving potential can be used neither to produce capital goods nor exports. These assumptions are highly unrealistic and have not been supported by empirical evidence.

Critics point out that the LDCs with dominant savings constraint do not need foreign aid. A dominant savings gap implies that the country is functioning at a full employment level. It is, therefore, not utilising its foreign exchange to import capital goods for investment purposes because the domestic resources are fully employed. As there is full employment, investment in capital goods through imports will lead to inflation.

Moreover, this approach does not consider the absorptive capacity of the economy, and ability to formulate and execute productive projects with aid.

The two-gap analysis is a highly aggregative approach which treats all types of capital investments as homogeneous. This is unrealistic because the capital requirements of LDCs are meant for specific needs and they receive foreign aid for different sectors, industries and projects.

Further, the two gaps are mechanistic. They assume stable values of the parameters in future. But this is unrealistic because the capital-output ratio and the marginal savings rate change over time, depending on domestic conditions and policies. After all, foreign aid cannot be exclusively relied upon to fill these gaps in the long run. As development, structural rigidities are removed and the domestic economy is so transformed as to equilibrate the two gaps. Domestic policies aiming at import substitution and export promotion determine the aid requirements of LDCs. Aid helps in removing rigidities, bringing structural transformation of the economy. Thus the model is very mechanistic in that it lays emphasis on filling gaps rather than transforming the economy with aid.

Lastly, the two-gap analysis is at best an approximation to estimate the foreign aid requirements of LDCs. But there are other import requirements, and in arriving at post-

requirement, potential domestic savings and expected foreign exchange earnings. It thus provides a crude method of estimating the foreign aid requirements of LDCs.

COSTS AND BENEFITS OF AID

Foreign aid which flows from the donor country in the form of grants, loans, technical assistance, contributions in kind, etc., to the recipient country involves real costs for the former and provides real benefits to the latter. John Pincus³ has measured the real costs of aid to the donor and the real benefits to the recipient of aid. He measures the real cost of capital flows for a capital exporter as the income he forgoes as a result of the outflow of capital, given alternative possible uses of the same funds. The real benefit for a capital importer is measured by the net increment in income as a result of investing the capital inflow received, as compared with making the same investment with capital from alternative sources.

For measuring capital flows from developed countries (DC) to LDCs, Pincus introduces the concept of a "grant equivalent". A grant is a sort of gift from a DC to an LDC on which the latter is not required to pay any interest or make repayment. A loan given by a DC on soft terms such as lower interest rate, longer grace period and longer repayment period has some concessional element as compared to a loan at commercial market terms. The concessional element in the loan can be converted into its grant equivalent. The concessional element or grant equivalent is the difference between the amount of loan and the present value of repayments discounted at the donor's long-term market rate of interest. Thus the real cost of aid loan to a donor is the difference between the present value of the future repayments discounted at the donor's long-term market rate of interest and the size of the loan.

The present value of an aid loan, therefore, depends upon the interest rate charges relative to the rate of return (discount rate) earned by the donor if the same amount had been invested at home, and on the period of repayment of the aid loan. If the loan rate equals the rate of return in the donor country, then the grant equivalent is zero and the loan is costless to the lender. If the rate of return in the donor country is higher than the loan rate, the real cost of the loan will be higher for the lender. On the contrary, if the loan rate is higher than the rate of return, the real cost will be less to the lender who will gain by lending.

The real benefit of aid loan to the recipient may differ from its real

³John Pincus, *Economic Aid and International Cost-sharing*, 1965, and *Costs and Benefits of Aid: An Empirical Analysis*, UNCTAD, 1967.

cost to the donor. The real benefit of a loan will depend upon the rate of return (discount rate) in the recipient country relative to the interest rate charged by the donor. If the rate of return on a similar loan in the recipient country is higher than the interest rate on aid loan, the real benefit of a loan to the borrower will be greater, and vice versa.

Besides the rate of return and the loan rate, the real cost and the real benefit of aid loan depends upon the period of grace and period of repayment. If the rate of return is higher than the loan rate in the lender country and the grace period and the repayment period are longer, the real cost to the donor will be high, and vice versa. On the other hand, if the rate of return in the recipient country is higher than the loan rate and the grace and repayment periods are longer, the real benefit to the donor will be larger, and vice versa.

However, it is difficult to calculate the real cost of aid when it is tied and is in the form of contributions in kind. If the donor ties the aid by requiring the recipient to import from the donor, the grant equivalent will be reduced for the recipient. The real cost to the donor may be less because it may be supplying its goods at prices higher than world market prices. Since the grant equivalent is reduced in this case, the real benefit to the recipient of tied aid is also less. Similar is the case when the donor gives aid in the form of contributions in kind such as surplus agricultural commodities valued at prices higher than world market prices. The opposite will be the case when aid is not tied and goods are valued at world market prices. Therefore, in computing the real cost of foreign aid to donors in a fully employed economy, John Pincus includes the sum of (i) grants, including technical assistance, at nominal value; (ii) loans valued at the difference between the amount of loan and the present value discounted at the market rate of interest, (iii) contributions in kind valued at world market prices; and (iv) sales of goods or loans repayable in recipient country's convertible currency valued as grants, after making allowance for funds actually spent by the donor in the recipient country.

This analysis of computation of the real cost to the donor is based on certain assumptions. First, it is assumed that resources are fully employed in the donor country. In case resources are underemployed in such a country, aid involves a real cost if resources are shifted from actual domestic projects to foreign aid. If the domestic projects have not been actually adopted, then the aid does not involve real cost. Second, this analysis assumes that prices of goods and services under tied aid are valued at world market prices. Third, the grant equivalent for each year is measured without deducting the debt service payments of earlier loans.

The above analysis can also be applied to the real benefit of capital

nflows for recipients. The higher the grant equivalent to recipient, the greater will be the real benefit to them. The grant equivalent is higher if the terms of aid are lenient. Similarly if the major portion of the aid is non-tied, the greater is the real benefit to the recipient country. Under such a situation, the same nominal amount of capital inflow will lead to the increase in the real benefit. If the conditions of aid are made softer and the adverse effects of aid-tying are reduced, the real benefit of capital inflow can more closely approach the nominal value of the inflow of capital to the recipient country.

Though the real benefits of aid are measured like its real costs, yet its values normally diverge from the latter due to a number of reasons. First, the interest rate for discounting usually differs in donor and recipient countries. If the discount rate in the recipient country is lower than that in the donor country, the grant equivalent to the recipient is less as compared to the donor. Second, in countries which adopt exchange controls the discount rate to be paid by the recipient country will equal the rate in the international securities market. If the donor country's currency is over-valued the discount rate of the recipient country would have to be increased accordingly. Third, the tied aid will reduce the grant equivalent if the donor country charges higher prices than the world prices for its goods and services. This will lead to a divergence between donor's cost and recipient's benefit estimates of grant equivalent. Fourth, it is difficult to calculate recipient's benefit from private investment. In particular, the beneficial effects of technical assistance and technological transfer to the recipient country are beset with many practical difficulties. All these considerations lead to the divergence of real benefits of aid to the recipient countries from the real costs to the donor countries and thereby tend to reduce the estimates of grant equivalents for recipients and donors.

Its Implications

The cost-benefit analysis of foreign aid leads to certain policy implications. Non-tied aid increases the real cost to the donor country. Tied aid reduces the real cost to the donor. At the same time, tied aid increases the burden of repayment for the recipient and reduces the real benefit of the aid. It is, therefore, advisable that the recipient should insist on non-tied aid as far as feasible.

This analysis lays emphasis on the DCs to ease the terms and conditions of aid to the LDCs. They should so adjust the aid that the grant equivalent per unit value of aid given should increase rather than decline. This argument gains greater force from the fact that a number of LDCs have very high debt service obligations and they find it difficult to repay their accumulated debts. Debt service in such countries

competes with essential imports for foreign exchange earnings, thereby adversely affecting domestic savings, investment and hence development. Therefore, the DCs should raise the grant equivalent per dollar of foreign aid to the LDCs. It is better to charge a rate of interest lower than the rate of return on loan in the recipient country.

Further, there is always the fear that the recipient may default on loan repayment. Therefore, the donor should provide grants rather than loans. But due to psychological and political reasons, it is in the interest of the recipient country to provide it soft loans rather than grants.

savings gap and the foreign exchange gap in order to achieve the goal of national economic development in LDCs.

(d) A part of the profits from direct foreign investment is generally ploughed back into the expansion, modernization or development of related industries.

(e) PFI adds more value added to output in the recipient country than the return on capital from foreign investment. In this sense, the social returns are greater than the private returns on foreign investment.

(f) PFI also brings revenue to the government of an LDC when it taxes profits of foreign firms or gets royalties from concession agreements.

(g) PFI helps in raising productivity and hence the real wages of local labour. When foreign investment induced industrialisation takes place, the real wages of the newly employed workers are higher than the real wages of workers in the rural sector of the economy. If PFI is in export-oriented industries, it leads to much higher social benefit than it is in import-substitution industries. Because the former have large backward and forward linkage effects. And if export industries are labour intensive, they also provide larger employment opportunities.

(h) Direct foreign investment also places of a burden in the balance of payments of an underdeveloped country in the early stage of development. For, the time lag between the starting of new business concerns and the reaping of profits is large. Moreover, profits are likely to be small in the earlier stages of production. Thus the remittance of profits from direct investment brings less pressure on the balance of payments. If PFI mainly flows into agriculture and extractive industries which produce primary goods for export, it further helps in easing the balance of payments position of LDCs. In the case of a developing country like India, PFI has a greater salutary effect on the balance of payments since it helps in producing manufactured articles, not only for the domestic market but also for foreign markets.

(i) Lastly, PFI flowing into a developing country also encourages its entrepreneurs to invest in other LDCs. Firms in India have started investing in Nepal, Uganda, Ethiopia and Kenya and other LDCs while they are still borrowing from abroad.

Demerits of Private Foreign Investment

PFI has certain disadvantages in the form of costs to the recipient country which tend to offset its benefits.

(1) The recipient country may be required to provide basic facilities like land, power and other public utilities, concessions in the form of tax holiday, development rebate, rebate on undistributed profits, additional depreciation allowance, subsidised inputs, etc. Such facilities a

concessions involve cost in absorbing an LDC's resources that could be utilized elsewhere by the government.

(2) To attract PFI, LDCs have to provide sufficient facilities for transferring profits, dividends, interest and principal. If these payments lead to a net capital outflow, they create serious balance of payments difficulties. Thus the indirect costs of debt servicing and balance of payments adjustments create serious foreign exchange crisis, thereby adversely affecting the national economy.

(3) No doubt, PFI increases investment, employment, income and saving in LDCs, but it adversely affects income distribution when it competes with home investment. Capital and other resources may flow to foreign enterprises in preference to domestic enterprises. This may reduce profits in the latter, thereby discouraging local enterprise.

(4) Many foreign concerns operating in LDCs, reserve all senior executive posts for their nationals and pay them very high salaries with many perks which are a huge drain on the resources of the recipient country. At best, they train local nationals for lower and middle level posts having little independent decision making. Moreover, the lavish spending habits of foreign national have an undesirable demonstration effect on the nationals of LDCs and create social tensions.

(5) PFI brings in highly capital intensive technologies which do not fit in the factor proportions of LDCs. Often obsolete and discarded machines and techniques are imported which involve high social costs in terms of replacement after a few years.

(6) PFI also involves costs in the form of a loss of domestic autonomy when foreign firms interfere in policy-making decisions of the government of an LDC which favours the foreign enterprises. Such interference is usually resorted to by the multinational corporations.

MULTINATIONAL CORPORATIONS AND LDCs*

Meaning

A multinational corporation (MNC)² is a company, firm or enterprise with its headquarters in a developed country such as the United States, Britain, West Germany, Japan, etc. and also operates in other countries, both developed and developing. They are spread not only in the LDCs of Asia, Africa and Latin America, but also on the continents of Europe, Australia, New Zealand, and South America. They are engaged in mining, tea, rubber, coffee and cocoa plantations; oil

*This section draws heavily on my article "Multinational Corporations—The Harms They are Doing to Developing Countries," *The Welfare Economist*, March 1976.

²MNCs are also known as transnational corporations (TNCs) International or 'global' corporations.

extraction and refining, manufacturing for home production and exports, etc. Their operations also include such services as banking, insurance, shipping, hotels and so on. Thus "like animals in the zoo, MNCs come in various shapes and sizes, perform distinctive functions differently and their individual impact on the environment."

Sanjaya Lal and Streeten³ define the MNCs from economic, organisational and motivational viewpoints. The economic definition lays emphasis on the size, geographical spread and extent of foreign involvement of the MNC. According to this definition, a typical multinational company is one with net sales of 100 million dollars to several thousand million dollars having direct foreign investment in manufacturing usually accounting for at least 15 to 20 per cent of the company's total investment. Direct foreign investment means at least a 25 per cent participation in the share capital of the foreign enterprise.

The organisational definition stresses on some organisational aspects of an MNC, besides the economic ones. In this respect a truly MNC is that which "(a) acts as an organisation maximising one overall objective for all its units, (b) treats the whole world (or the parts open to it) as its operational area, and (c) is able to coordinate all its function in any way necessary for achieving (a) and (b).

The motivational definition highlights "corporate philosophy and motivation in laying down criteria for multinationality. Thus, 'True' multinationality is generally indicated by a lack of nationalism, or a concern with the firm as a whole rather than with any of its constituent units or any country of its operations." On this basis, firms are distinguished between ethnocentric (home-oriented), polycentric (host-oriented) and geocentric (world-oriented), on the basis of attitudes revealed by their executives.

Lal and Streeten define MNCs in general as very large firms with widespread operations which are clearly international in character and have more than five foreign subsidiaries or more than 15 per cent of total sales produced abroad, and acting in a cohesive manner to achieve maximum profits or growth.

Spread of MNCs

MNCs overwhelmingly dominate not only global investment but also international production, trade, finance and technology. But adequate and reliable up-to-date data regarding the spread of MNCs in terms of subsidiaries, production, trade, finance and technology are rarely published and hence are not available. A pioneering study, Sovereignty

³Foreign Investment, Transnationals and Developing Countries, 1977. The following analysis closely follows S. Lal and Streeten

at Bay (1971), by Raymond Vernon listed 300 colossal MNCs whose total production (not sales) of goods and services totalled \$350 billion a year. Of these, 187 were U.S. controlled raw material producers and manufacturing concerns, half of the remaining third were British and Dutch, and the other half European and Japanese. Among the first ten, eight were American and the remaining two were British-Dutch combines, the largest being General Motors with the total world sales of \$25 billion which exceeded the GNP of all but a dozen countries in 1970.

An American magazine *Forbes* (November 15, 1971) published a list of 50 major American corporations which revealed that on an average 40 per cent of their total revenue came from their fields like tea (115 branches), pharmaceuticals (24 branches and subsidiaries), cosmetics, food products, manufacture of industrial products and consumer goods of wide range, oil exploration, book publishing, automobiles, chemicals, fertilisers, etc.

Merits of MNCs

The advantages flowing from the MNCs to the LDCs are based on the theories of direct foreign investment. Such theories are related to oligopolistic interdependence and monopolistic behaviour of the MNCs. Hence they confer the following advantages on MNCs.

1. MNCs are financially very strong and hence provide large and cheap capital to the LDCs by way of direct investment.
2. They undertake great risk in investing their funds in LDCs in the face of imperfect infrastructural facilities like power, transport, skilled labour, etc., low market demand and short supply of inputs.
3. They start new ventures and bestow the advantages of superior management, training, education and entrepreneurial ability in LDCs..
4. They transfer superior technology to LDCs based on R & D in the parent concerns because they are able to spend huge funds on R & D. This leads to the discovery and introduction of new processes and new and differentiated products in LDCs which tend to raise the standard of living of the people in LDCs.
5. MNCs bring in new techniques of marketing in LDCs through market research at their headquarters. They adopt novel advertising and promotional methods which impart information to buyers and create demand for particular brands and products. This encourages competition.
6. Above all, MNCs are socially desirable in LDCs because they lead to a net increase in capital formation, output and employment.*

*For other benefits of MNCs refer to the *Merits of MNCs*.

Demerits of MNCs

MNCs have come to be regarded as agents of exploitation in LDCs because of their invidious operations which are highlighted in their *modus operandi*.

The US-based MNCs insist on cent per cent ownership in LDCs and they have succeeded in this in Singapore, Mexico, Hong Kong, Brazil and Taiwan. With low rates of taxation in these countries, they have been exporting "super profits" to America.

In countries like India where since the 1960s, the MNCs are allowed to operate as joint ventures with 25 to 40 per cent participation, they enjoy a number of privileges which again tend to increase their profits manifold. Such concessions or privileges are in the form of dividends, payment for installation fee, royalty on the use of patents, payment on know-how fee, payment for imported equipment whose price is 30 to 40 per cent higher than the competitive international price, and tax holiday for a number of years if the concern belongs to the priority sector industry.

Besides, the staff which comes in the wake of an MNC is paid very high salaries. Some of their top executives get much more than the highest paid executive head of the state in which they serve. Not only this, the MNCs pay to the locally employed labour twice and even three times more than what they might earn in local firms. This not only leads to social inequality but also breeds discontent and unrest among the workers employed in indigenous industry.

The MNCs are pre-empting local savings by overpricing the imports and underpricing the exports of LDCs. In cases where there is competition from local entrepreneurs, the MNCs undercut them by offering low prices for their products. As a result, the local firms are squeezed out of business. But if there are very few local firms to compete with, the MNCs buy their majority shares or merge them to exercise control over them.

The MNCs transfer second rate and overpriced technology to LDCs.* More often, they try to minimise the transfer of technology to such countries by (a) carrying out R & D in the parent company located at the headquarters; (b) neglecting the training of local personnel for R & D posts; and (c) holding closely the technology itself. Moreover, the technology which the MNCs transfer into the LDCs is capital-intensive and hence unsuited to their capital-scarce and labour-surplus economies.

*However, there have been exceptions in the case of Canada, Taiwan and Hong Kong by US multinationals because the products manufactured in their plants located in the countries are exported to the USA.

The MNCs set up their plants in big towns and cities in LDCs where infrastructural facilities are easily available. Thus they accentuate sectoral inequalities and strengthen dualism in such countries.

Besides, the long-term effect of direct and indirect investment by the MNCs on the balance of payments is usually negative as they repatriate huge amounts in the form of royalties, profits, interest, dividend capital, etc.

Last but not the least, the MNCs influence the internal politics to the detriment of the LDCs by bribing the legislators not only directly but also indirectly. They offer posts in the higher echelons of their companies to the privileged sections of the society, especially to the friends and relatives of the local politicians, bureaucrats and the economic oligarchies. They also subvert domestic fiscal and monetary policies in LDCs.

An Overview

It is not that the MNCs are simply the agents of exploitation, they also act as agents of development. By establishing manufacturing plants, providing production, managerial, technical, organisational and marketing skills, and by harnessing their resources, the MNCs have helped in augmenting the GNP of Singapore, Hong Kong, Taiwan and Canada. But as pointed out earlier, these benefits accruing to such countries have been the outcome of the self-interest of the MNCs, that is, the need to meet the US domestic market.

The problem before the other developing countries like India is how to control and curtail the damaging effect of MNCs and harness them for their maximum benefit. All this depends upon the "will" to control the working of these global giants. Given this, the LDCs should have stringent anti-trust laws, as we have in India the twin institutions known as the Monopolies Commission and the MRTP Act. The MNCs should be encouraged to enter into 'licensing agreements' with a local manufacturer who may be taught the use of the patented processes in lieu of a fixed royalty.

The LDCs should also take advantage of the expertise and superior technical know-how of the MNCs by entering into 'turnkey agreements' with them whereby a foreign company undertakes to build a plant or help in exploiting their natural resources, imparts training to local personnel, provides technical know-how, starts production and then leaves the country for good by entrusting the entire operations to the local firm. In lieu of these services, the MNC should be paid either a fixed fee or cost-plus fee. India has entered into such agreements for the exploration of its off-shore oil resources.

Further, there should be joint venture agreements on 60-40 basis at

the maximum by the local concerns with the MNCs. All joint ventures with the foreign concerns should be based on specific agreements to manufacture the product within the country with indigenously produced and procured raw materials (provided they are available), to train and employ nationals in high jobs, to carry on R & D within the host country and to reinvest a certain percentage of profits within it.

It is advisable, as suggested by Streeten, that the governments of LDCs should not press the MNCs to pay specially high wages to local labour. Rather, the MNCs should be asked to employ local people at the prevalent rates for the same jobs in the country. On the other hand, they should tax the MNCs more heavily so that the people of the country benefit rather than the few people who work for them. This increased tax revenue may be spent in providing greater infrastructural facilities to the people which will benefit all sections of the society including the MNCs. Moreover, foreigners receiving higher salaries and better facilities than their local counterparts in similar jobs should also be taxed equally.

Given the conditions laid down above, the MNCs should be encouraged to establish plants in backward areas or regions of LDCs so that regional imbalances are ironed out.

Since there is no likelihood of any agreement on the international plane over a 'code of conduct' which may govern the operations of MNCs, every LDC should have its own independent agency to report on the working of MNCs from time to time in that country and should not hesitate to take stern actions against the offending giants which may even be tantamount to nationalisation.

SOME PROBLEMS OF DEVELOPMENT PLANNING

Chapter 52

ECONOMIC PLANNING

MEANING OF ECONOMIC PLANNING

There is no agreement among economists with regard to the meaning of the term 'economic planning'. The term has been used very loosely in economic literature. It is often confused with communism, socialism or economic development. Any type of state intervention in economic affairs has also been treated as planning. But the state can intervene even without making any plan. What then is planning? Planning is a technique, a means to an end being the realization of certain pre-determined and well-defined aims and objectives laid down by a central planning authority. The end may be to achieve economic, social, political or military objectives. Therefore, "the issue is not between a plan and no plan, it is between different kinds of plans."¹

Professor Lewis has referred to six different senses in which the term planning is used in economic literature. "First, there is an enormous literature in which it refers only to the geographical zoning of factors, residential buildings, cinemas and the like. Sometimes this is called town and country planning and sometimes just planning. Secondly, 'planning' means only deciding what money the government will spend in the future, if it has the money to spend. Thirdly, a 'planned economy' is one in which each production unit (or firm) uses only the resources of men, materials and equipment allocated to it by quota and disposes of its product exclusively to persons or firms indicated to it by central order. Fourthly, 'planning' sometimes means any setting of production targets by the government, whether for private or public enterprise. Most governments practise this type of planning if only sporadically, and if only for one or two industries or services to which they attach special importance. Fifthly, here targets are set for the economy as a whole, purporting to allocate all the country's labour, foreign exchange, raw materials and other resources between the various branches of the

¹L. Robbins, *Economic Policy and International Order*, p. 6.

economy." And, finally, "the word 'planning' is sometimes used to describe the means which the government uses to try to enforce upon private enterprise the targets which have been previously determined."²

But Ferdinand Zweig maintains that 'planning' is planning of the economy, not within the economy. It is not a mere planning of towns, public works or separate section of the national economy, but of the economy as a whole.³ Thus planning does not mean piecemeal planning but overall planning of the economy.

Some of the definitions of economic planning are: Professor Robbins defines economic planning as "collective control or supersession of private activities of production and exchange."

To Hayek, planning means, "the direction of productive activity by a central authority."

According to Dr. Dalton, "Economic planning in the widest sense is the deliberate direction by persons in charge of large resources of economic activity towards chosen ends."

Lewis Lordwin defined economic planning "as a scheme of economic organization in which individual and separate plants, enterprises, and industries are treated as coordinate units of one single system for the purpose of utilizing available resources to achieve the maximum satisfaction of the people's needs within a given time."

In the words of Zweig, "Economic planning consists in the extension of the functions of public authorities to organization and utilization of economic resources...Planning implies and leads to centralization of the national economy."

One of the most popular definitions is by Dickinson who defines planning as "the making of major economic decisions what and how much is to be produced, how, when and where it is to be produced, to whom it is to be allocated, by the conscious decision of a determinate authority, on the basis of comprehensive survey of the economic system as a whole."

Even though there is no unanimity of opinion on the subject, yet economic planning as understood by the majority of economists implies *deliberate control and direction of the economy by a central authority for the purpose of achieving definite targets and objectives within a specified period of time.*

Need for Planning in Underdeveloped Countries

One of the principal objectives of planning in underdeveloped countries is to increase the rate of economic development. In the words

²W. A. Lewis, *The Principles of Economic Planning*, 1954

³F. Zweig, *Planning of Free Societies*, p. 14

of D.R. Gadgil, "Planning for economic development implies external direction or regulation of economic activity by the planning authority which is, in most cases, identified with the government of the state."⁴ It means increasing the rate of capital formation by raising the levels of income, saving and investment. But increasing the rate of capital formation in underdeveloped economies is beset with a number of difficulties. People are poverty-ridden. Their capacity to save is extremely low due to low levels of income and high propensity to consume. As a result, the rate of investment is low which leads to capital deficiency and low productivity. Low productivity means low income and the vicious circle is complete. This vicious economic circle can only be broken by planned development. Two methods are open to underdeveloped countries. One is planned development by importing capital from abroad which Zweig calls 'supported industrialization,' and the other is by force saving which he characterises as 'self-sufficient industrialization'.

The rationale for planning arises in such countries to improve and strengthen the market mechanism. The market mechanism works imperfectly in underdeveloped countries because of the ignorance and unfamiliarity with it. A large part of the economy comprises the non-monetised sector. The product, factor, money and capital markets are not organised properly. Thus the price system exists in only a rudimentary form and fails to bring about adjustments between aggregate demand and supply of goods and services. To remove market imperfections, to mobilise and utilise efficiently the available resources, to determine the amount and composition of investment, and to overcome structural rigidities, the market mechanism is required to be perfected in underdeveloped countries through planning.

The need for planning in underdeveloped countries is further stressed by the necessity of removing widespread unemployment and disguised unemployment in such economies. Capital being scarce and labour being abundant, the problem of providing gainful employment opportunities to an ever-increasing labour force is a difficult one. It is only a centralized planning authority which can solve this. In the absence of sufficient enterprise and initiative, the planning authority is the only institution for planning the balanced development of the economy. For rapid economic development, underdeveloped countries require the development of the agricultural and the industrial sectors, the establishment of social and economic overheads, the expansion of the domestic and foreign trade sectors in a harmonious way. All this requires

⁴D.R. Gadgil, *Planning and Economic Policy in India*, p. 88.

simultaneous investment in different sectors which is only possible under development planning.

The need for developing the agricultural sector along with the industrial sector arises from the fact that agriculture and industry are interdependent. Reorganisation of agriculture releases surplus labour force which can be absorbed by the industrial sector. Development of agriculture is also essential to supply the raw material needs of the industrial sector.

and industrial development. So are the training and educational institutions, public health and housing for providing a regular flow of trained and skilled personnel. But private enterprise in underdeveloped countries is not interested in developing the social and economic overheads due to their unprofitability. It is motivated by personal gain rather than by social gain. It, therefore, devolves on the state to create social and economic overheads in a planned way.

Similarly, the expansion of the domestic and foreign trade requires not only the development of the agricultural and industrial sectors along with social and economic overheads but also the existence of financial institutions. Money developed countries. industry and trade. national cyclical move

and regulate the domestic and foreign trade in the best interests of the economy.

The planning for development is indispensable for removing the poverty of nations. For raising national and per capita income, for reducing inequalities in income and wealth, for increasing employment opportunities, for all-round rapid development and for maintaining their newly won national independence, planning is the only path open to underdeveloped countries. There is no greater truth than this that the idea of planning took a practical shape in an underdeveloped country and that this is the only hope of the resurgent underdeveloped countries of the world. The rapid development of the USSR, a poor country at the time of the October Revolution, bears testimony to this fact. To sum up,

be satisfactory and because it is further held that appropriate external intervention will result in increasing considerably the pace of development and directing it properly. Planners seek to bring about a rationalization, and if possible and necessary, some reduction of consumption, to evolve and adopt a long-term plan of appropriate investment of capital resources with progressively improved techniques, a programme of training and education through which the competence of labour to make use of capital resources is increased, and a better distribution of the national product so as to attain social security and peace. Planning, therefore, means, in a sense, no more than better organization, consistent and far-seeing organization and comprehensive all-sided organization. Direction, regulations, controls on private activity, and increasing the sphere of public activity, are all parts of organizational effort.”⁵

Plan Formulation and Requisites for Successful Planning

The formulation and success of a plan require the following:

1. **Planning Commission.** The first prerequisite for a plan is the setting up of a planning commission which should be organised in a proper way. It should be divided and sub-divided into a number of divisions and sub-divisions under such experts as economists, statisticians, engineers, etc, dealing with the various aspects of the economy.
2. **Statistical Data.** A prerequisite for sound planning is a thorough survey of the existing potential resources of a country together with its deficiencies. As Baykov puts it: “Every act of planning, in so far as it is not mere fantastic castle building presupposes a preliminary investigation of existing resources.”⁶ Such a survey is essential for the collection of statistical data and information with regard to the total available material, capital and human resources of the country. Data pertaining to the available and potential natural resources along with the degree of their exploitation, agricultural and industrial output, transport, technical and non-technical personnel etc., are essential for fixing targets and priorities in planning. It, therefore, requires the setting up of a central statistical organization with a network of statistical bureaux for collecting statistical data and information for the formulation of the plan.

3. **Objectives.** The plan may lay down the following objectives: to increase national income and per capita income; to expand employment opportunities; to reduce inequalities of income and wealth and concentration of economic power; to raise agricultural production; to

⁵Ibid.

⁶The Developing of the Soviet Economic System, p. 427.

industrialise the economy; to achieve balanced regional development; to achieve self-reliance, etc. The various goals and objectives should be realistic, mutually compatible and flexible enough in keeping with the requirements of the economy.

4. Fixation of Targets and Priorities. The next problem is to fix targets and priorities for achieving the objectives laid down in the plan. They should be both global and sectoral. Global targets must be bold and cover every aspect of the economy. They include quantitative production targets, so many more million tons of foodstuffs, coals, steel, fertilizers, etc., so many kilowatts of power capacity, so many metres of railways and roads, so many additional training institutions, so much increase in national income, saving, investment, etc. There are also sectoral targets pertaining to individual industries and products in physical and value terms both for the private and public sectors. Global and sectoral targets should be mutually consistent in order to attain the required growth rate for economy. This necessitates determining priorities. Priorities should be laid down on the basis of the short-term and long-term needs of the economy keeping in view the available material, capital and human resources.

'Such schemes or projects which are required to be executed first, should be given top priority while the less important should have a low priority. The scheme of priorities should not be rigid but may be changed according to the requirements of the country. Thus 'sound governmental planning consists of establishing intelligent priorities for the public investment programme and formulating a sensible and consistent set of public policies to encourage growth in the private sector.'⁷

5. Mobilisation of Resources. A plan fixes the public sector outlays for which resources are required to be mobilised. There are various internal and external resources for financing a plan. Savings profits of public enterprises, net marketing borrowings, taxation and deficit financing are the principal internal sources of finance for the public sector. The budgetary receipts corresponding to external assistance are the principal external sources of financing the plan. The plan should fix up such policies and instruments for mobilising resources which will not increase financial outlay of the plan without inflationary and balance of payments pressures. At the same time, they should not tax agriculture and household savings of the private sector.

6. Balancing In the Plan. A plan should ensure that resources in the

⁷W.A. Lewis, *Development Planning Ideas*.

"For problems of resource mobilisation refer to Chapter 9 in Part Two of this book."

economy, otherwise shortages or surpluses will arise as the plan progresses. There should be balance between saving and investment, between the available supply of goods and the demand for them, between manpower requirements and their availabilities, and between the demand for imports and the available foreign exchange.

Aggregate savings come from various sources such as voluntary savings, taxation, profits of public enterprises, foreign remittances by nationals, etc. These must equal planned aggregate investment in fixed capital assets and inventories in the economy. The balance between the supply and demand for goods requires balancing of the available supply of consumption goods with their demand, of the supply of capital goods, materials and inventories with their requirements, of the supply of intermediate goods with their demand, and the proposed requirements of exports of goods with their supplies. Balances are also required between planned demand and supply of manpower, and between import requirements and the available foreign exchange during the plan period.

In fact, two kinds of balances must be secured in a plan. The first is the physical balance which consists of balancing the planned increase in output of various goods with the amounts and types of investment. It also requires the balancing of the outputs of the various sectors of the economy. This is achieved through the input-output technique because the output of one sector or industry is the input of the other for producing its output. Physical balancing is essential for the internal consistency of the plan, otherwise such physical obstacles as lack of raw materials, manpower, etc., will develop in the economy. The second is the monetary or financial balance which consists of balancing the incomes of the people with the amount of goods available to them for consumption, the funds used for private investment and the amount of investment goods available to private investors, the funds used for public investment and the amount of investment goods produced by the public sector, and the balancing of foreign payments and receipts. The lack of these financial balances will lead to disequilibrium in the supply and demand for physical goods thereby leading to inflationary and balance of payments pressures during planning.

7. In corrupt and Efficient Administration. A strong, efficient and incorrupt administration is the *sine qua non* of successful planning. But this is what an underdeveloped country lacks the most. Lewis regards a strong, competent and incorrupt administration as the first condition for the success of a plan. The Central Cabinet in an underdeveloped country should not take important economic decisions hurriedly without getting them properly examined from technical advisers. Competent administrative staff should be appointed in various ministries which should first prepare good feasibility reports of proposed projects before

starting them. It should gain experience in planning and starting a project, keeping it on schedule, amending it in case of some unexpected snags, and evaluating it from time to time. Without such administrative machinery, development planning has no *locus standi* in an under-developed country. Lewis is very emphatic when he writes, "In the absence of such an administration it is often much better that governments should be laissez-faire than they should pretend to plan."⁹ The phenomenal success of development planning in Russia can be attributed to "a highly trained and disciplined priestly order of the Communist Party." "In making a plan," writes Lewis at another place, "technique is subsidiary to policy. Hence although the basic techniques are displayed, the emphasis is throughout on policy. The economics of development is not very complicated; the secret of successful planning lies more in sensible politics and good public administration."

8. Proper Development Policy. The state should lay down a proper development policy for the success of a development plan and to avoid any pitfalls that may arise in the development process. Professor Lewis lists the following main elements of such a development policy. (i) investigation of development potential, survey of national resources, scientific research, market research; (ii) provision of adequate infrastructure (water, power, transport, and communications) whether by public or private agencies; (iii) provision of specialized training facilities, as well as adequate general education, thereby ensuring necessary skills; (iv) improving the legal framework of economic activity, especially laws relating to land tenure, corporations and commercial transactions; (v) helping to create more and better markets, including commodity markets, security exchanges, banking, insurance and credit facilities; (vi) seeking out and assisting potential entrepreneurs, both domestic and foreign; (vii) promoting better utilization of resources, both by offering inducements and by operating controls against misuse; and (viii) promoting an increase in saving, both private and public.¹⁰ The success of a development plan can be tested mainly by examining various proposals under each of these heads. Good policies help, but they may not ensure success. Lewis, therefore, likens development planning to medicine which in the hands of a good practitioner may perform useful tricks, "but it is still the case that many patients die who are expected to live, and many live who are expected to die."¹⁰

9. Economy in Administration. Every effort should be made to effect

⁹ W. A. Lewis, *The Principles of Economic Planning*, 1954 and *Development Planning* 1966.

¹⁰ *Development Planning*, pp. 22-23

economies in administration, particularly in the expansion of ministries and state departments. "The people must feel confident that every pie that they pay to the government through taxation and borrowings is properly spent for their welfare and development, and not dissipated away."¹¹

10. An Education Base. For a clean and efficient administration, a firm educational base is essential. Planning to be successful must take care of the ethical and moral standards of the people. One cannot expect economy and efficiency in administration unless the people possess high ethical and moral values. This is not possible unless a strong educational base is built up whereby instructions are imparted both in the academic and technical fields. "Without creating honest and efficient human beings in the country, it would not be feasible to undertake economic planning on a big scale."

11. A Theory of Consumption. According to Professor Galbraith¹² an important requirement of modern development planning is that it has a theory of consumption. Underdeveloped countries should not follow the consumption patterns of the more developed countries. The theory of consumption should be democratic and "prime attention must be accorded to goods that are within the range of the model income that can be purchased by the typical family...Cheap bicycles in a low-income country are thus more important than cheap automobiles. An inexpensive electric lighting system for the villages is better than a high capacity system which runs equipment, the people cannot afford. Inexpensive radio sets are important, television belongs to another day. Above all, nothing is so important, as abundant and efficiently produced food, clothing and shelter, for these are the most universal of requirements."

12. Public Cooperation. Above all, public cooperation is considered to be one of the important levers for the success of the plan in a democratic country. Planning requires the unstinted cooperation of the people. Economic planning should be above party politics, but at the same time, it should have the approval of all the parties. In other words, a plan should be regarded as a National Plan when it is approved by the representative of the people. For, without public support no plan can be a success. As Lewis states: "Popular enthusiasm is both the lubricating oil of planning and the petrol of economic development, a dynamic force that makes all things possible."¹³

¹¹Shriman Narayan, *Trends in Indian Planning*, p. 36. Italics mine.

¹²J.K. Galbraith, *Economic Development in Perspective*, 1962.

¹³Principles of Economic Planning, *op. cit.*, p. 128.

PLANNING BY DIRECTION AND PLANNING BY INDUCEMENT

Professor Lewis¹⁴ draws a distinction between planning by direction and planning by inducement for the purpose of mobilizing resources of the plan.

Planning by Direction

Planning by direction is an integral part of a socialist society like that of the Soviet Union. It entails complete absence of laissez-faire. There is one central authority which plans, directs, and orders the execution of the plan in accordance with pre-determined targets and priorities. Such planning is comprehensive and encompasses the entire economy. As Lange has stated: "With regard to the socialist sector the national plan represents a binding directive. The targets of the national plan and its financial provision represent orders to be carried out of the various ministries and the enterprises subject to him. They are duty bound to carry out the directives of the plan." The State holds the "commanding posts" in its hands by taking over the entire private industrial and agricultural sectors, and banking and transport. "Without such concentration the State would lack the means to carry out the tasks of the plan. Provisions in the plan would be mere "pious wishes" without any guarantee of realization attached to them."¹⁵

Its Drawbacks. But planning by direction has got some drawbacks

First, planning by direction is associated with a bureaucratic and totalitarian regime. There is complete absence of consumers' sovereignty. People are not allowed to spend and consume according to their choice. Even the right to choose one's occupation does not exist. Both the consumer and labour markets are determined by the planning authority. Rationing and price controls are the main props of planning by direction which will lead to corruption and nepotism. Thus there is no economic freedom. As aptly pointed out by Hayek, "Economic planning would involve directions of almost the whole of our life. There is hardly any aspect of it, from our primary need to our relations, with our family and friends, from the nature of our work to the use of our relations, with our family and friends, from the nature of our work to the use of our leisure, over which the planner would not exercise his conscious control."¹⁶

Secondly, planning by direction is always unsatisfactory because the present economic system is exceedingly complex. In order to increase the output of a commodity, planning requires the increase in the output

¹⁴Ibid., Chapter 1.

¹⁵O. Lange, *Essays on Economic Planning*, pp. 14-16

¹⁶F.W. Hayek, *Road to Serfdom*.

of all complementaries or a reduction in the output of substitutes. And when such decisions are to be taken in the case of innumerable commodities, it becomes an extremely difficult task, and targets are never fulfilled. As Lewis remarks, "In planning by direction the result is always a shortage of some things, and a surplus of others."

Thirdly, planning by direction is always inflexible. Once a plan has been drawn, it becomes impossible to revise any part of it, necessitated by circumstances. For, it is an extremely difficult task to alter a part of the plan without altering the whole of it. So the plan has to be carried through as an integrated whole despite the various pitfalls.

Fourthly, as a corollary to the above, as the plan proceeds the fulfilment of targets under planning by direction becomes a difficult task. The more one tries to overcome the difficulties of planning by direction, the more costly the fulfilment of targets become in terms of resources.

Fifthly, planning by direction develops what Lewis calls the 'tendency to procrustean.' It leads to excessive standardization because it makes production process easy. A standardized product is manufactured without any varieties. Lewis maintains that "standardization is frequently an engine of progress, but it is also frequently the enemy of happiness, and in foreign trade it is in many lines fatal to success." Moreover, production of only one type of standard good in each line of production is inimical to the growth of initiative and enterprise. There is no urge to innovate.

Lastly, planning by direction is a costly affair. It requires an army of clerks, statisticians, economists, and other trained personnel. Large funds are spent on conducting innumerable surveys and censuses.

Despite all these defects in planning by direction, the experience of the Soviet Union is a clear testimony to the fact that this type of planning is the most effective technique for accelerating the growth rate of the economy.

Planning by Inducement

Planning by inducement is democratic planning. It means planning by manipulating the market. There is no compulsion but persuasion. There is freedom of enterprise, freedom of consumption and freedom of production. But these 'freedoms' are subject to state control and regulation. People are induced to act in a certain way through various monetary and fiscal measures. If the planning authority wishes to encourage the production of a commodity, it can give subsidy to the firms. And if it finds scarcity of goods in the market, it can introduce price control and rationing. In order to increase the rate of capital formation, the planning authority can then undertake public investment

and/or encourage private investment. It can adopt a suitable monetary policy and at the same time a taxation policy which encourages investment and discourages consumption.

Thus planning by inducement is able to achieve the same results as are likely to be achieved in planning by direction but with less sacrifice of individual liberty.

Its Difficulties. But planning by inducement is beset with a number of difficulties which may make it less successful as compared to planning by direction.

(i) It is maintained that the incentives offered may not be adequate for the producers and consumers to act the way the state desires them to behave. It may upset the government plans.

(ii) Since the actual working of the plan is left to the market forces, surpluses or shortages are bound to arise. Proper adjustment between demand and supply is difficult to achieve. Shortages are frequent and they necessitate price control and rationing which are the forms of direction. In such a situation, planning by inducement merges into planning by direction.

(iii) Similarly, monetary and fiscal measures alone are inadequate to induce planned development of the economy by raising the rate of capital formation. We have seen above that it is very difficult to raise the rate of capital formation in an underdeveloped country because of the low levels of income and saving. People have a tendency to utilize their savings in unproductive channels. On the other hand, planning by direction is more useful for this purpose.

Conclusion

Whether a country should adopt the method of planning by direction or planning by inducement depends entirely on the system of government. A full-fledged socialist country will adopt planning by direction. On the other hand, a capitalist economy will adhere to the technique of the planning by inducement.

But both these planning techniques are complementary. They cannot be placed into water-tight compartments. Both of them are indispensable and at the same time practicable in underdeveloped countries. The state alone is incapable of developing the economy in such countries. It lacks not only in financial but also in administrative resources. So it leads the private sector to work and expand under its direction and control. For this, inducements can be given in the form of subsidies and tax exemptions. Savings, investment, consumption and production can be directed into right directions. The state can obtain resources through deficit financing, borrowing and taxation. It can also set up basic heavy industries and undertake social and economic overheads.

the best course for an underdeveloped country is to have a judicious blending of the two.

India has adopted a middle course of action in her development plans—a mixed economy in which both planning by direction and planning by inducement are playing their respective roles.

FINANCIAL AND PHYSICAL PLANNING

Financial planning refers to the technique of planning in which resources are allocated in terms of money while physical planning pertains to the allocation of resources in terms of men, materials and machinery.

Financial Planning

Finance is the main key to economic planning. If sufficient finances are available, it is not difficult to achieve physical targets. But without the stipulated financial resources it is not possible to carry the plan to its successful culmination. Financial planning is essential in order to remove maladjustments between supplies and demand and for calculating costs and benefits of the various projects. The Indian Planning Commission points out that: "The essence of financial planning is to ensure that demands and supplies are matched in a manner which exploits physical potentialities as fully as possible without major and unplanned changes in the price structure."¹⁷

In the case of financial planning "the outlay is fixed in terms of money and the estimates are made on the basis of various hypotheses regarding the growth of the national income, consumption, imports, etc., to cover this outlay by taxation, savings and the increase in the cash holding." "This consists in establishing an equilibrium between the incomes of the population—wages, incomes of peasants and others—and the amount of consumers goods which will be available to the population.... Further it must establish equilibrium between that part of incomes of the population which will be used for private investment and the amount of investment goods made available to private investors. Finally, in the public sector a balance must be established between the financial funds made available for investment purposes and the amount of investment goods which will be produced or imported. In addition to these balances, it is necessary to establish the balances of foreign payments and receipts."¹⁸ Financial planning is thus thought to secure a balance between demands and supplies, avoid inflation and bring about economic stability.

¹⁷Second Five-Year Plan, p. 16.

¹⁸O. Lange, *Economic Development, Planning and International Cooperation*, 1961.

Its Limitations. But this appears to be an exaggerated view, for financial planning has its *limitations* in an underdeveloped country.

First, measures to mobilize financial resources through taxation may adversely affect the propensity to save.

Secondly, in an underdeveloped country there is a vast subsistence non-monetized sector and a small organized money sector. Thus there is bound to be an imbalance between the two sectors. This will lead to shortages in supplies and to an inflationary rise in prices. As a result, physical targets are likely to be upset.

Thirdly, it is possible that supplies can be increased through imports, but they will lead to balance of payments difficulties from which underdeveloped countries already suffer.

Fourthly, to be successful financial planning must be free from all bottlenecks, especially inflationary rise in prices. It is more appropriate to use it in sectoral planning rather than in overall planning.

Lastly, financial planning is unsuited to an underdeveloped economy where this "means not merely loss of potential income but also a threat to the character of balanced social development because it results in an insufficient provision of employment at average wages relative to the increase in the population and thus increases inequality between those who are privileged to obtain employment and those whose needs both for work and income necessarily remain unmet."

Physical Planning

Physical planning "is an attempt to work out the implications of the development effort in terms of factor allocations and product yields so as to maximize incomes and employment."¹⁹ "The physical balance consists in a proper evaluation of the relations between investment and output... Investment coefficients are computed. These coefficients indicate the amount of investment and also the composition of that investment in terms of various kinds of goods needed in order to obtain an increase of output of a product by a given amount. For example, how much iron, how much coal, how much electric power is needed in order to produce an additional ton of steel. On this basis, the planned increase in output of various products is balanced with the amounts and types of investment. It is also necessary to balance the outputs of the various sections of the economy because.. the output of one branch of the economy serves as an input for producing the output of another branch." Financial planning is only a means to achieve this end. Lack of financing to carry out an investment project in an underdeveloped country ordinarily does not reflect the lack of physical re-

¹⁹ Second Five-Year Plan, op. cit., p. 14

In physical planning, an overall assessment is made of the available real resources such as raw materials, manpower, etc., and how they have to be obtained so that bottlenecks may not appear during the working of the plan. Physical planning requires the fixation of physical targets with regard to agricultural and industrial production, socio-cultural and transportation services, consumption levels and in respect of employment, income and investment levels of the economy. There must be proper balances in the various targets set in the plan. Moreover, physical planning has to be viewed as an overall long-term planning rather than a short-term piecemeal planning. Professor Balogh stresses the importance of physical planning in these words, "The only politically sound and morally responsible strategy involves steady pressure up to the limits of physical resources. It involves hair-sharp sectoral balance and concentration of attention on the widening of supply bottlenecks as they arise. The soundness of a plan from a national point of view can be tested only by the strain it causes. A lessening of strain, the accumulation, for instance, of foreign reserves means that the system is not being driven to the utmost of its physical capacity."²⁰

Its Limitations. But physical planning has certain limitations in underdeveloped country.

First, the most formidable problem in such economies is the lack of statistical data and information with regard to the available physical resources. If physical targets are fixed beyond the available resources on the basis of inaccurate data, planning will end in a

Secondly, another problem is that of balancing the different sectors of the economy. It is not possible to attain internal consistency in order in an underdeveloped country due to its inherent difficulties. The country may not have reached that state of needed for achieving the targets laid down. There may be failure of harvests thus restricting the supply of agriculture. Or, industrial production itself may fall due to the power supply. Dr. Lange suggests that in order to provide for contingencies, the input-output and consumption balance for certain reserve stocks.²¹

Thirdly, such shortages in physical targets are bound to create inflationary pressures through an increase in prices. This process is extremely harmful for an underdeveloped country where levels of income and saving are already very low. In its report, Indian Planning Commission recommends physical

²⁰Notes on Indian Economic Strategy (Mng. ISI).

²¹O. Lange, *Essays on Economic Planning*, op. cit., p. 6.

tions. Realizing the administrative cumbrousness and hardships associated with controls and rationing, it emphasized that these controls should not be regarded as sufficient by themselves and should be simultaneously accompanied by measures to increase supplies.²²

Lastly, physical planning without financial planning is always a negation of planning in an underdeveloped country. If plans are drawn on the basis of physical resources without any regard to the availability of financial resources, plan targets can never be fulfilled. In India, due to the lack of financial resources in the closing year of the Second Plan, the size of the plan had to be pruned to the tune of Rs 200 crores, the extent of financial shortage.

Conclusion

Now the question is should an underdeveloped country adopt the technique of financial planning or physical planning? The answer to this question depends on the political structure of the state. In socialist states like Russia, there is physical planning. Since there is the absence of private property and all the resources belong to the state, finance never acts as a bottleneck. "Lack of finance to carry out an investment project reflects lack of physical resources to do so or an allocation decision to use these resources elsewhere in the national economy. The financial part of planning is only an instrument of social accounting in a socialist state."²³ It is meant to translate the values of inputs and outputs in terms of money to calculate costs, profits, incomes and prices.

In a capitalist country, as already discussed above, financial planning is as much important as physical planning. Both are complementary. Both are mutually consistent. For effective planning, both are needed together. As Mahalanobis pointed out in his Draft Plan Framework, "The physical targets of production must be balanced in terms of physical quantities of raw materials, machinery, energy, transport, etc., and also in terms of manpower and of the flow of money. Incomes are generated in the very process of production, and supplies are utilized through market operations. Planning requires that aggregate income should be balanced with expenditure, savings should match investments, and the supply and demand of individual goods and services should be balanced in terms of money so as to avoid any inflationary rise in prices or undesirable shifts in prices, physical and financial planning are different aspects of the same reality."

Thus both the techniques are required to be integrated in development planning. Physical targets should be balanced in terms of the

²² *Ibid.*, p. 39

²³ *Ibid.*, p. 4.

available financial resources, while larger financial resources should be mobilized in order to fulfil physical targets for accelerating the pace of development.

PERSPECTIVE PLANNING AND ANNUAL PLANNING

The phrase 'perspective planning' refers to long-term planning in which long range targets are set in advance for a period of 15, 20 or 25 years. A perspective plan, according to the Indian Planning Commission, "is a blueprint of developments to be undertaken over a longer period." A perspective plan, however, does not imply one plan for the entire period of 15 or 20 years. In reality, the broader objectives and targets are to be achieved within the specified period of time by dividing the perspective plan into several *short-period* plans of four, five or six years. Compared with the perspective plan, the short-period plan makes for greater precision. It is easier to look ahead over short periods than over very long periods. Moreover, many unpredictable changes can vitiate the long-term data. Therefore, a perspective plan is always split up into short-term plans. Not only this, a five-year plan is further broken up into *annual* plans so that each annual plan fits into the broad framework of the five-year plan. Plans of either kind are further divided into regional and sectional plans. *Regional* plans pertain to regions; districts and localities being further split up into sectional plans for agriculture, industry, foreign trade, transportation etc. These *sectional* plans are divided into further sub-plans for each branch such as, a plan for foodgrains, a plan for iron and steel, a plan for exports and so on. All these plans and sub-plans are related to the perspective plan. A perspective plan reflects long-term targets, while the current plans and sub-plans are the necessary support for the former to achieve those targets. "Planning is a continuous process and cannot be isolated for short periods. Thus, the present Five-Year Plan is a projection and continuation of the previous plans, and it will lead to the subsequent plans. Planning is a continuous movement towards desired goals and because of this, all major decisions have to be made by agencies informed of these goals and the social purpose behind them. Even in considering a five-year period, forward and long-term planning has always to be kept in view. Indeed perspective planning is the essence of the planning process."²⁴

"The main purpose of a perspective plan is thus to provide a background to the shorter term plans, so that the problems that have to be solved over a very long period can be taken into account in planning."

²⁴Third Five-Plan. Italics mine.

over a shorter term. .. Above all one can express in a perspective plan those forces, the effects of which can be estimated with reasonable certainty over long periods. These include growth of population, the influence of education, which is only apparent over long periods, and the growth of general technological factors which have been shown in the past as a measure of regularity. Factors that are exposed to rapid changes, such as harvest yields, which are dependent on the weather, and other factors that are exposed to fruitful or irregular fluctuations cannot be, and for the most part also do not need to be taken into account."²⁵ Mahalanobis observes that perspective planning is necessarily a continuing process and has two broad aspects. One is current planning directed to projects included in the annual plans within the framework of the five-year plan. The successive five-year plans themselves would have to be fitted into a larger framework of perspective planning with a wide time horizon of 10, 20 or 30 years or even more. Perspective planning would be primarily concerned with the technical and scientific aspects of long-term growth of the economy. Studies and researches would be directed to solving practical problems and would be broadly of a type of operational research (although some problems of basic research would no doubt arise from time to time). This would call for the active cooperation of a large number of engineers, technologists, economists, statisticians and workers in practically all fields of both natural and social sciences."²⁶ There is *Perspective Planning Division* in the Planning Commission of India which is entrusted with the task of perspective planning.²⁷

The idea of perspective planning was mooted in 1920 with the launching of the first long-term plan for the electrification of Russia—the famous GOELRO plan. Up to 1958, Russia had been having five-year plans for its economic development. But in 1959 it embarked upon a twenty-year plan for 1960-80, the target figures for 1959-65 having been regarded as an integral element of their long-term plan for economic development. In India also, the five-year plans visualize the problem of economic development from a longer perspective.

Demerits of Perspective Planning. Planning for fixed periods is essential to start with because it goads the people and the government to move on the path laid down in the perspective plan. But it is not without certain serious demerits. *First*, such a plan is rigid because necessary or desirable adjustments to unforeseen changes or corrections of errors may not be made, and the adaptations that are made will tend to occur

²⁵J. Tinbergen, *Development Planning*, 1976 Italics mine

²⁶P C Mahalanobis in *Sankhya*, December 1955

²⁷For India's Perspective Planning, see Model of the Fourth Plan in the chapter "Planning in India."

abruptly between plan periods. Thus it is not feasible administratively. *Secondly*, "psychologically...the compulsion to revise the plan downward when no formal provision for this is made can have demoralizing effects. This is illustrated by the experience in India after 1957, when those in authority issued contradictory statements and were even tempted into pious falsification of the facts. This tended to spread confusion, cynicism, and defeatism in business, in the administration, and among the public. More flexible planning could have prevented some of the miscalculations of foreign exchange requirements and some of the faults in the handling of import licences in the beginning of this period." According to Myrdal, perspective planning should, therefore, be started during an experimental period.²⁸

INDICATIVE PLANNING AND IMPERATIVE PLANNING

Indicative planning prevails in France. This type of planning is not imperative but flexible. Planning in socialist countries is comprehensive in which the planning authority decides about the amount to be invested in each sector, in fixation of prices of products and factors, and the types and quantities of products to be produced. There being rigidity in this type of planning if there is some distortion in one sector, it adversely affects the entire economy which cannot be remedied immediately. The French system of planning is free from all such troubles because it is based on the principle of decentralization in the operation and execution of the national plans. It is known as indicative or soft planning, as distinct from comprehensive or imperative planning.

Indicative planning is peculiar to the mixed economy of France and is quite different from the type of planning that prevails in the other mixed economies of the world. In a mixed economy, the public and private sectors work together. The state controls and regulates the private sector in a number of ways so that the private sector may cooperate in fulfilling the targets and priorities of the plan. The usual methods to control this sector are licences, quotas, price and quantity determination of products, financial aid, etc. It has to work under the direction of the state. But in indicative planning the private sector is neither rigidly controlled nor directed to fulfil the targets and priorities of the plan. Even then, the private sector is expected to fulfil the targets for the success of the plan. The state provides all types of facilities to the private sector but does not direct it, rather indicates the areas in which it can help in implementing the plan.

Indicative planning has been in use in France since the Monnet Plan

²⁸G. Myrdal, *Asian Drama*, 1968.

of 1947-50. In the French system of planning, the public sector comprises *basic sectors* like coal, cement, steel, transportation, fuel, fertilizers, farm machinery, electricity, tourism, etc. In these sectors, the fulfilment of production and investment targets is imperative. Besides, there are certain *basic actions* which are considered essential for the operation of the basic sectors and are, therefore, directly under the state. They are: (i) the development of scientific and technical research including atomic energy; (ii) reduction of costs through rationalization and long-term programming; (iii) specialization and regrouping of industrial concerns; (iv) market organization of agricultural products; and (v) reconversion of old firms and retention of displaced manpower. In the remaining sectors of economy and even in the above fields where the private sector co-exists with the public sector, planning is *indicative*. It consists in the integration of individual planning efforts which, in isolation, are incapable of achieving their objectives.

In the national plan, production and investment targets are laid down for both the public and private sectors. The basis of the national plans is the *Economic Table* which is made up of data pertaining to consumption, saving, investment, and foreign trade. This table shows the inputs and outputs of each sector of the economy. While framing the draft plan, the *Commissariat au Plan* (the French Planning Commission) discusses the plan with the representatives of the private sector in a number of commissions, known as *Modernization Commissions* to give the plan its final shape. There are two types of commissions, vertical and horizontal. The vertical commissions discuss and finalize the activities of the various sectors of the economy, such as agriculture, coal, steel, manufacturing, power, transportation, housing, education, public health, social welfare, etc. The horizontal commissions, on the other hand, deal with various balances in the economy—between investment and saving, between income and expenditure of the state, between the inward and outward flows of foreign currency, and between financial and physical estimates. In this way, the private sector becomes a partner in the economic plan and helps in fulfilling the targets of the plan. The government provides incentives to the private sector through grants, loans, tax exemptions, etc. It gives guidance to the private sector instead of issuing directions. The private sector relies on the market conditions for production and investment programmes. And if there is need for making adjustments in the plan due to changed market conditions, they can be made even during its execution stage. Thus there is sufficient individual freedom of choice and action in French planning. In fact, it presents a perfect compromise between freedom and planning, incorporates the merits of both the free market and planned econon

successfully avoids their demerits.

However, the success of indicative planning presupposes that "every branch of activity is promised the possibility of acquiring its production factors and selling its goods on a balanced market. The promise, however, is only kept if everybody plays the game. The promise acts merely as an incentive. It is not binding on anybody."²⁹ But the actual experience of indicative planning in France shows that firms do not play the game when the development programme does not coincide with their profit expectations. Often monopolistic organisations do not care for the incomes policy laid down by the government and use their power for personal benefit. Moreover, under conditions of price inflation, the government interferes with the market mechanism by resorting to direct controls instead of monetary and fiscal policies. Thus the working of indicative planning in France casts doubts about its being a golden mean between free market and planned economies.

On the other hand, under imperative planning all economic activities and resources of the economy operate under the direction of the state. There is complete control over the factors of production by the state. The entire resources of the country are used to the maximum in order to fulfil the targets of the plan. There is no consumers' sovereignty in such planning. The consumers get commodities in fixed quantities at fixed prices. Often the commodities are rationed. Production of commodities is in accordance with government policies. What and how much to produce—such decisions are taken by the managers of firms and factories on the direction of the planning commission or a central planning authority. Since the government policies and decisions are rigid, they cannot be changed easily. If there is some bottleneck in fulfilling production targets at any stage, it adversely affects all related sectors of production. If managers of industries do not carry out production plans properly, production falls which undermines the entire production process in the economy. Imperative planning is in operation in China and Russia.

DEMOCRATIC PLANNING AND TOTALITARIAN PLANNING

Democratic planning implies planning within democracy. To many economists like Hayek and Lippman, planning is incompatible with democracy. Hayek goes to the extent of saying that "what was promised to us as the Road to Freedom was in fact the High Road to Serfdom." But Hayek has in mind totalitarian planning which is comprehensive. In

²⁹Pierre Masse, "French Methods of Planning", *Journal of Industrial Economics*, Nov. 1962.

totalitarian or authoritarian planning there is central control and direction of all economic activity in accordance with a single plan. There is planning by direction where consumption, production, exchange, and distribution are all controlled by the state. In authoritarian planning, the planning authority is the supreme body. It decides about the targets, schemes, allocations, methods and procedures of implementation of the plan. There is absolutely no opposition to the plan. People have to accept and rigidly implement the plan. Economic and political powers are polarised and social life is regimented. There is thus no democratic freedom in authoritarian planning which is extremely rigid. But there are others who hold the view that "a planned society can be far more free society than the competitive *laissez-faire* order which it has come to replace." Whatever the degree of deliberate control and direction of economic forces be in totalitarian planning, it is for making the economic system perfect, and maintaining stability, and achieving rapid growth. Moreover, as pointed out by Professor Myrdal, "I find no example, in history where democracy has been lost because of too much planning and state intervention, but plenty of examples on the contrary."³⁰ He, therefore, favours the Soviet type of planning for the underdeveloped countries of South-East Asia because it is scientific and efficient as compared to an unplanned economic system. Though authoritarian planning can help in achieving the targets within the stipulated period and according to schedule, yet the price which the people of underdeveloped countries shall have to pay in the form of the loss of economic, social and political freedoms is enormous. It is, therefore, better to have democratic planning and achieve the same results without, at the same time, sacrificing these freedoms totally.

In democratic planning, the philosophy of democratic government is accepted as the ideological basis. People are associated at every step in the formulation and implementation of the plan. A democratic plan is characterized by the widest possible consultations with the various state governments and private enterprises at the stage of preparation. It seeks to avoid all clashes, and tries to harmonise all opinions that are for the welfare of the people. Cooperation of different agencies, and voluntary groups, and associations plays a major role in its execution. The plan is fully debated in the Parliament, and the state legislatures and in the private forums. The plan prepared by the Planning Commission is not accepted as such. It can be accepted, rejected or modified by the Parliament of the country. Thus the plan is not forced upon the people from above, it is planning from below.

Democratic planning respects the institution of private property

³⁰G. Myrdal, *An International Economy*, 1959

Nationalization is resorted to the limited extent absolutely necessary, and reasonable compensation is paid in all cases. Price mechanism is allowed to play its due role. The government only seeks to influence economic and investment decisions in the private sector through fiscal and monetary measures. The private sector operates side by side with the public sector. There is healthy competition between the two for the fulfilment of the plan targets. Democratic planning aims at the removal of inequalities of income and wealth through peaceful means by taxation and government spending on social welfare and social security schemes. Individual freedom prevails. People enjoy social, economic and political freedoms.

India is a unique experimentation in democratic planning. Planning in India is being carried out under a democratic government which is elected under universal suffrage. There is no undue encroachment on the rights and liberties of the people in the execution of the plans. There is the freedom to own private property and in the event of expropriation, adequate compensation is paid. Private sector co-exists with public sector. The latter operates under the guidance, help and supervision of the government. There is no force in the implementation of the five-year plans which are fully discussed and debated both within and outside the Parliament. People enjoy the fundamental rights of freedom of speech, association, occupation, etc. The planning procedure in India is democratic.

Criticism. Critics are not lacking in characterising democratic planning as a myth. They opine that democracy is not to be found anywhere, so there cannot be democratic planning either. Some sort of state intervention is inevitable even in democratic planning whereby economic freedom becomes a farce. The institution of controls in various forms on consumption, production and distribution in India, viz., price controls and rationing, industrial licensing, monopoly regulation, import restrictions, state trading, etc., do not make for economic freedom. "India's planning is of an imperative type in democratic context....It is a half way house between command and free economy, imbibing the disadvantages of both without the advantages of the either....essentially an uncommitted and interminate system, it has its inbuilt difficulties which hinder progress. Socialist economy can follow its own path of growth—capitalist countries their own—planned economy in a democracy operates between the two—divided between public and private sector. In India the relationship between the two has been far from ideal."³¹

It is contended by Professor William Letwin that the Planning

³¹K.N. Bhattacharyya, *Planning: Economics and Economy*, 1971.

Commission in India does not possess an autonomous status in the real sense of the term. It is a part of the ruling party. The Chairman of the Planning Commission is the Prime Minister. The National Development Council, the most important body, is already without constitutional and statutory authority which derives its power from the simple fact that its members are the Prime Minister and Opposition members, the chief ministers of all the states.... "The (resultant) plan is politics, not science..... Thus Indian planning is democratic in constitutional form, in that the chief decisions are made by elected representatives of the people, it is not democratic in substance."³² We do not agree with Professor Letwin because in democratic planning the plan must reflect the aspirations of the masses as represented by the ruling party in the Parliament.

Thus Indian planning is democratic both constitutionally and in substance, for some sort of controls and state intervention are essential for lifting the economy out of the morass and for the welfare of the masses. It is, however, felt that Indian planning in its democratic set-up should be *indicative* rather than *imperative* as has been the experience of France.

ROLLING AND FIXED PLANS

Professor Myrdal was the first economist to advocate a rolling plan for developing countries in his book *Indian Economic Planning in its Broader Setting*. India did not experiment it for the first time in 1978. It was introduced for purposes of defence after the Chinese aggression in 1962 and has been a great success in making the country almost self-sufficient in the manufacture of sophisticated arms and ammunitions, frigates and aircrafts, and helped to prepare it face Pakistan twice. It was introduced in Indian planning by the Janata Government on April 1, 1978 and was given up on April 1, 1980 with the coming to power of the Indira Government.

In a rolling plan, every year three new plans are made and acted upon. First, there is a plan for the current year which includes the annual budget and the foreign exchange budget. Second, there is a plan for a number of years, say three, four or five. It is changed every year in keeping with the requirements of the economy. It contains targets and techniques to be followed during the plan period, along with price relationships and price policies. Third, a perspective plan for 10, 15 or 20 or even more years is presented every year in which the broader goals are stated and the outlines of future development are forecast. The

³²Quoted in *Economic Planning*, B.C. Tandon, 1970.

annual one-year plan is fitted into the same year's new three-, four- or five-year plan, and both are framed in the light of the perspective plan. For example, if planning is started in 1970 in a country, there would be three plans under the technique of rolling plan: an annual plan for 1970; a five-year plan for 1970-75, and a 20-year plan for 1970-90. The broad aims and objectives are laid down in the 20-year perspective plan. When the plan starts in 1970, there will be an annual plan in every subsequent year, that is, 1971, 1972 and so on. The five-year plan for 1970-75 will also roll on for the subsequent periods by shedding each previous year so as to become a plan for 1971-76, 1972-77 and so on. Since planning is a continuous process, every year the plan is revised in the light of new information, improved data and improved analysis. "At each revision it will be well to look into the future a number of years which is determined by the *nature of the factual circumstances*.... If five years is deemed to be a suitable horizon, this number of years may be applied at each of the yearly revisions in sense one would always be working in the beginning of a five-year period."

Merits. The concept of rolling plan is devised to overcome the rigidities encountered in the fixed five-year plans. In the rolling plan there are plan targets, projections and allocations that are not fixed for the five-year period but are liable to revision every year in keeping with the changing conditions of the country. It not only provides greater flexibility but also a clearer perspective and a better view of the priorities.

Being flexible, a rolling plan is more realistic than a flexible plan. It takes into consideration such unforeseen natural and economic changes as floods, drought, war, hike in oil prices, etc. which may affect the economy adversely. Under a rolling plan, financial and physical targets can be revised in keeping with such changes. But such revisions are not possible under a fixed plan. Thus the rolling plan combines the advantages of both perspective and flexible planning.

Demerits. But critics are not lacking in pointing towards certain demerits of this technique of rolling plan. They point out that since the targets are likely to be revised every year, it is not possible to achieve the targets laid down in the plan within a fixed time period. Such frequent revisions also make it difficult to maintain proper balances in the economy which are essential for its balanced development. Again, when the plan is continuously revised, it creates uncertainties in the private and public sectors of the economy. Both sectors lose the urge to make changes in their production plans or to proceed in accordance with the previously laid down targets. To achieve bigger targets becomes out of question. Moreover, constant revisions of the targets of the plan develop an attitude of non-commitment and apathy among the planners.

and the public which do not augur well for the future development of such a country.

Further, the success of the rolling plan depends on a strong communication system from the village to the headquarters of the

operation of the latest computerised system which is very costly and is difficult to operate in an underdeveloped country. Leaving aside this aspect, the success of a rolling plan depends upon the extent to which data are collected, communicated and computerised regularly. It also depends on the ability of the planning machinery to cope with the work of continuous revisions of the five-year plan every year in the light of the changing natural or economic conditions. But it is not within the competence of the planning machinery in an underdeveloped country to collect, communicate and computerise data accurately and regularly throughout the year from different sectors of the economy.

Again, for the rolling plan to be successful, "up-to-date knowledge of progress as well as the shortcomings in the implementation of projects are absolutely essential. Unfortunately, such information is today so widely scattered that for all practical purposes it does not exist. And, at any rate, it is far from up-to-date and quite insufficient to roll the plan. To organise such information and the capacity to use it is, therefore, the prime need. As this obviously cannot be done overnight it would be advisable, to start with, for the rolling exercise to be confined to selected sectors in which the required information can be effectively organised."

These were the difficulties which led to the abandonment of this technique of rolling plan in such underdeveloped countries as Burma and Mexico. But it has been a success in such developed countries as Japan and Poland.

Fixed Plan

In contrast to the rolling plan, there is a fixed plan for four, five, six or seven years. A fixed plan lays down definite aims and objectives which are required to be achieved during the plan period. For this purpose, physical targets are fixed along with the total outlay. Physical targets and financial outlays are seldom changed except under emergencies. Planning in Russia and India is of the fixed type. Economic plans in Russia are of seven years, while they are of five years in India.

Merits. Such planning has certain merits which make it superior to rolling planning.

One of the merits of this type of planning is that it fixes targets at

fixed plan and they can be better faced and overcome during a fixed plan period. As regards the long-term problems of poverty, unemployment, inequalities and regional imbalances are concerned, they can be gradually solved within the framework of a number of fixed plans. Projects with long gestation period can also be completed under two or three plans. In fact, all long-term problems and projects form part of a perspective plan which is contained in every five-year plan document. The present five-year plan is a projection and continuation of the previous plans, and it leads to subsequent plans. Thus all long-term problems of an economy can be solved by a series of fixed plans.

PLANNING UNDER CAPITALISM AND SOCIALISM

Planning under capitalism is not based on any central plan. In the absence of a central plan, the means of production are owned privately. Production is also carried out by private enterprise. It is not planned by the government. Market prices are determined by market forces and are not set by the government. So under capitalist planning, the institutions of private ownership, private enterprise and price mechanism continue to operate. Given these institutions, there is no comprehensive planning under capitalism. The state plans on a limited scale "to harness self-interest to the service of the community as a whole, and to supplement the price system, as well as ensuring that it works efficiently.³³

To achieve these tasks, the government of a capitalist economy performs three functions: (1) It adopts appropriate measures to maintain aggregate demand which is neither too small nor too large so that recession or inflation is avoided. For this, the government regulates the actions of private enterprise. It establishes healthy monetary and credit institutions, and adopts fiscal measures in keeping with the economic situation of the country. (2) It prevents monopoly concentration. Monopoly distorts the price mechanism under capitalism. It restricts output to keep up prices so that less resources are employed. To check monopoly and monopolistic practices, the government adopts anti-monopolistic measures and even nationalises some of the monopolistic corporations for the benefit of the community at large. (3) The government adopts measures for the satisfaction of communal wants in the form of public health measures, public parks, roads, bridges, museums, zoos, education, floor control measures, etc. All these activities of the government are not coordinated by any central plan.

Thus planning under capitalism is confined to the regulatory activities

³³F.W. Paish, *Benham's Economics*, 8/e, p. 56.

of the government so as to avoid recession or inflation, to prevent monopoly concentration, to raise the standard of living of the people, and to create conditions for the smooth functioning of the price mechanism with a sufficient degree of competition.

Planning Under Socialism

Planning under socialism is based on a central plan. There is a central planning authority or board which formulates a plan for the entire economy. There is complete centralisation of economic power in the central planning authority. It fixes the plan objectives, priorities and targets. It organises and allocates the resources of the economy by deliberate direction and control for the purpose of achieving definite objectives and targets laid down in the plan during a specified period of time. The central problems of an economy—what and how much is to be produced, how, when and where it is to be produced, and to whom it is to be allocated—are exclusively decided by it.

The central plan has definite socio-economic objectives. These objectives "may concern aggregate demand, full employment, satisfaction of communal demand, allocation of factors of production, distribution of the national income, the amount of capital accumulation, economic development, and so forth".

To achieve these objectives, the planning authority owns and controls the means of production and distribution. All mines, farms, factories, financial institutions, distributing agencies such as shops, stores, internal and external trade, means of transport and communications, etc. are owned, controlled and regulated by government departments and state corporations under the overall supervision and control of the planning authority. Production in the different sectors of the economy is governed by priorities and targets of the plan. Production of consumer goods is generally governed by the preferences of consumers and the available commodities are distributed to them at fixed prices. Under socialist planning, consumers' sovereignty is confined only to the choice of socially useful commodities which the planning authority deems fit to produce and provide to the people.

The pricing process under socialist planning does not operate freely but works under the control and regulation of the central planning authority. According to Dickinson, socialist planning and the pricing process are not opposed to each other. Rather, they are complementary principles of economic regulation. The former supports the latter in four ways: First, to give general direction to the socialist economy. Second, to make decisions where market indications are lacking. Third, to eliminate cyclical fluctuations in economic activity. Fourth, to deal with special emergencies. Thus the pricing process plays an important role

under socialist planning even though prices are fixed by the planning authority. There are market prices at which consumer goods are sold. There are also accounting prices on the basis of which managers decide about the production of consumer goods and investment goods, and also about the choice of production methods. The pricing process does not regulate the plan. It is subservient to the central plan.

Conclusion. Socialist planning is superior to capitalist planning. The adoption of planning under capitalism fails to bring economic efficiency, to avoid wastage of resources, to check monopolistic practices fully to reduce inequalities of income and wealth, and to avoid booms and slumps. This is borne out by the experience of all capitalist countries. On the other hand, socialist planning provides greater economic efficiency because the means of production are not left to the market forces. Rather, they are controlled and regulated by the planning authority in the most efficient manner. Moreover, there is greater welfare due to less inequality under socialist planning. The central plan aims at providing socially useful goods and services. As the planning authority owns, controls and regulates all the means of production and distribution, every citizen is paid his remuneration according to his ability, education and training, thereby reducing inequalities. Finally, under socialist planning, the planning authority is able to avoid deflationary and inflationary trends by a better coordination of the actions of various producing units and making full use of available resources.

CENTRALISED AND DECENTRALISED PLANNING

Planning may be centralised or decentralised. This division is made from the viewpoint of the execution of plans. Under centralised planning, the entire planning process in a country is under a central planning authority. This authority formulates a central plan, fixes objectives, targets and priorities for every sector of the economy. It takes all investment decisions in accordance with the goals and targets of the plan. The principal problems of the economy—what and how much is to be produced, how, when and where it is to be produced, and to whom it is to be allocated—are exclusively decided by this authority. The central planning authority controls every aspect of the economy. It fixes prices of all products and wages of all types of workers. All anticipated financial product and factor imbalances that are likely to arise within the planning period, are sought to be corrected in advance by the planning authority. Oscar Lange rejects centralised planning because of its undemocratic character. The entire planning process is based on bureaucratic control and regulation. Naturally, such planning is rigid.

There is no economic freedom and all economic activities are directed from above. Shortages and mistakes arising during the course of planning are not likely to be rectified because of the absence of decentralised decision-making.

On the other hand, decentralised planning refers to the execution of the plan from the grass roots. Under it, a plan is formulated by the central planning authority in consultation with the different administrative units of the country. The central plan incorporates plans under the central schemes, and plans for the states under a federal set-up. The state plans incorporate district and village level plans. Similarly, plans for different industries are formulated in consultation with representatives of industries. But individual firms are free to take independent decisions about investment and output policies, and so are individual farmers. Under decentralised planning, prices of goods and services are primarily determined by the market mechanism despite government control and regulation in certain fields of economic activity. There is freedom of consumption, production and enterprise under it. However, the planning authority recommends to the central and state governments to provide certain incentives to the private sector. It also lays down areas of public sector activities.

Decentralised planning is superior to centralised planning in that it provides economic freedom and flexibility to the economy. But its dependence on the market mechanism leads to shortages or surpluses in the production of goods and services. They are likely to create problems for the government because adjustment are difficult to make. For instance, shortages of goods lead to inflation and the adoption of price controls and rationing creates more problems. Further, it is not possible to coordinate the decisions of the planned and unplanned sectors. This is one of the main reasons for distortions in the economy which lead to disequilibrium in the demand for and supply of goods and services. Of the two, centralised planning provides cohesiveness to the economy whereas decentralised planning provides economic freedom and incentives to the market economy.

CORRECTIVE PLANNING AND DEVELOPMENT PLANNING

A number of maladjustments arise in a capitalist economy. When the government plans and adopts various fiscal, monetary and direct control measures to rectify them, this is called corrective planning. If the economy suffers from inflationary pressures, the government adopts such corrective measures as a contractionary monetary policy, raising tax rates, reducing consumption, investment and public expenditure. It may also adopt a surplus budgetary policy. In the event of a depression,

corrective planning includes an expansionary monetary policy, reduction in tax rates, stimulation of consumption, increase in private and public investment, and a deficit budgetary policy. Excessive inequalities of income distribution and concentration of monopoly power are also sought to be reduced under corrective planning. To reduce inequalities of income distribution, corrective planning requires the adoption of such measures as imposition of heavier burdens on the higher income groups through death duties, steeply progressive income taxes, increased expenditure on public works and social security etc. To control monopoly concentration, the government may encourage competitive small business, start public enterprises, pass anti-monopoly laws and even nationalise monopolistic industries. Planning in the United States and in other capitalist countries is of the corrective type.

Development planning is meant to develop the economy as a whole. It involves "the application of a rational system of choices among feasible courses of investment and other development actions."³⁴ For this, it relies to a large extent on the market mechanism. Under development planning, the government formulates a development plan for the whole economy. It includes consideration of the most important economic aggregates such as total saving, investment, output, government expenditure and foreign transactions. It also explores sectoral relationships in the overall framework of the economy. In particular, it lays down investment priorities for the public sector. Public investments cover the whole infrastructure of the economy including investments in health, education and training. The private sector is considered a partner in the development efforts of the economy. The government does not use force on the private sector to get the plan implemented. Rather, it provides incentives through monetary, fiscal and direct control measures. At the same time, the government adopts measures to restrict unproductive activities so that private investment is channelised into productive activities.

Development planning is primarily related to the development activities of underdeveloped countries. Since such countries have a number of economic, social and political obstacles to development, it is not possible to make development planning a success even by the best policies. Lewis observes in this connection: "Good policies help, but do not ensure success. Development planning is in this respect like medicine; the good practitioner knows some useful tricks; but it is still the case that many patients die who are expected to live, and many live who are expected to die."³⁵

³⁴A. Waterstone, "Lessons of Experience," in *Leading Issues in Economic Development* Gerald M. Meier, (ed.), 2/e, 1970.

³⁵W.A. Lewis, *Development Planning*, p. 23.

PLANNING IN A MIXED ECONOMY

Mixed economy is compromise between the two economic systems, capitalism and socialism. It is a system which is free from the evils of both capitalism and socialism but integrates the good features of both. That is why it is known as mixed economy which is a golden means between capitalism and socialism. It is through planning that the merits of a socialist economy are imparted and the defects of capitalism are sought to be removed in a mixed economy.

Planning in a mixed economy is not comprehensive in the sense of socialist planning. It divides the economy into public and private sectors for the purpose of economic development. The public sector is under the direct control of the government which regulates its production and distribution. All services in which the profit expectations are low and investments are large with long gestation period are operated under the public sector, such as rail, road and air transport, power generation plants, posts and telegraphs, etc. There are in fact public utilities which are operated by the state for public welfare. Besides, defence, atomic energy, heavy, basic and strategic industries are all operated in the public sector. The plan allocates investment lays down targets and fixes priorities for this sector.

There is the private sector in which individuals manage what they own, usually in farming, industry and retailing. Keeping the public interest in view, the state regulates the working of this sector by giving suggestions, subsidies, credit facilities, raw materials, cheap power, concessional transport facilities, tax holidays, concessions, etc., and by administrative controls and directions. If certain industries do not work satisfactorily or operate against public interest, the state nationalises them by paying appropriate compensation.

A sector based on the principles of cooperation also exists in a mixed economy. It is usually to be found in farming, dairying, consumer purchases, and in small manufacturing. The cooperative sector is organised by the people with the assistance of state cooperative agencies to reduce exploitative market tendencies and to inculcate spirits of cooperation and self-help.

Planning in a mixed economy is meant to provide all the freedoms of capitalism, such as freedom of consumption, freedom of production, freedom of occupation, freedom to hold property, etc. But these freedoms cannot be enjoyed absolutely and at the cost of public welfare. So the government puts checks on these freedoms by proper regulation and control of such economic activities as the production and distribution of essential commodities in order to prevent their hoarding and black-marketing, and even rationing them in the event of acute

shortages, of private property for an equitable distribution, of monopoly concentration of economic power, etc.

The ultimate aim of planning in a mixed economy is to remove the evils of capitalism and to promote the maximum welfare of the people. These objectives are achieved through the various measures outlined above. Besides, to protect workers from capitalist exploitation, the state passes labour laws and fixes minimum wages, working hours, etc. and provides social security in the form of life insurance, unemployment insurance pension, provident fund, maternity benefits, free education, recreational facilities, etc. The state also aims at reducing inequalities of income distribution through these measures.

Planning in underdeveloped countries is primarily based on the concept of mixed economy. The main aim of such planning is to increase the growth rate of the economy, given the various limiting factors in such countries. For this, planning in a mixed economy envisages a high rate of capital formation through various monetary, fiscal and physical control measures; through foreign aid, comprehensive exchange control and protective tariffs; and through public and private investments so that the economy develops in a balanced way. Thus planning in a mixed economy "affords the advantages of resolute government action in overcoming existing barriers to economic growth, does not involve an amount of central integration exceeding the capacity of its bureaucracy, and fosters a maximum of cooperation between private business and government."

Despite these merits, planning in a mixed economy is faced with certain problems which make it difficult to achieve the objective and targets of the plan. First, there is non-cooperation between the two sectors. The experience of the working of mixed economies reveals that the government treats the private sector like a step-child and imposes many restrictions on it. The private sector is taxed heavily. It has to operate under numerous controls and "bureaucratic capitalism". On the other hand, the public sector is given preference over the private sector in all matters. Thus bitterness and non-cooperation develop between the two sectors which lead to the non-fulfilment of the plan targets. Since the private sector operates on the basis of the market mechanism, shortages lead to rise in prices which spread to the public sector. This is because both the sectors are dependent on each other for supplies of raw materials, intermediate products, etc. Second, planning in a mixed economy involves the expansion of the public sector whereby public outlay is increased. But enough financial resources are not available in an underdeveloped country to meet large plan outlays. This leads to deficit spending, thereby leading to inflationary pressures within the economy. Third, the public sector is a big burden on the financial plan.

Bureaucratic control leads to inefficiency. There is over-staffing of the personnel, red tapism, corruption and nepotism. As a result, production falls and losses emerge. Moreover, the majority of public undertakings being of long-gestation period and involving huge investments, they continue to operate under losses for a number of years. Thus shortages of goods continue which accentuate inflationary pressures.

PLANNING MODELS

Planning models have been increasingly used in LDCs for the drawing up of plans for economic development. A model expresses relationships among economic variables which explain and predict past and future events under a set of simplifying assumptions. In other words, a model consists of a series of equations, each of which represents the association among certain variables. In this sense, a planning model is a series of mathematical equations which help in the drawing up of a plan for economic development. Broadly, a model may have endogenous and exogenous variables. Endogenous variables are those whose values are determined from within the system such as national income, consumption, saving, investment, etc. On the other hand, exogenous variables are determined from outside the system such as prices, exports, imports, technological changes, etc. A planning model specifies relationships between endogenous and exogenous variables and aims at ensuring the consistency of the proposed plan for economic development "It is meant to yield an optimally balanced collection of measures, known as Model Targets, which can help the planning authority in the drawing of an actual plan." A UN study defines a planning model as that based on precise knowledge of medium and long-term economic aims, which is mathematically expressed in the form of a preference function and reflects the initial conditions of the economy including economic policy measures already proposed and show the most probable path of economic development.³⁶

Planning models are of three types: aggregate, multisector and decentralisation. Aggregative models trace the optimal paths of development overtime of such economy-wide aggregates as income, saving, consumption, investment, etc. The Harrod-Domar Models and the Two-Gap Models are of this type. But it is not possible to build highly aggregative models in LDCs because of the lack of accurate data and computational devices. Therefore, multisector models are designed which connect macroeconomic aggregates with the sectors constituting the operational content of the plan. The Mahalanobis Two-Sector and

³⁶UN, ECE, *Development in the Construction and Use of Macroeconomic Models*, 1968.

Four-Sector Models are of this type. Multisector models are also set in terms of input-output models. They are consistency models based on the Leontief inter-industry system. The Consistency Model for India's Fourth Plan by Manne, Rudra and others, and the model of Indian Fifth Plan were framed in terms of the input-output models.³⁷ Further, optimising or linear programming models are also multisector planning models. They extend the consistency models of the input-output type to optimization of income or employment or any other quantifiable plan objective under the constraints of limited resources and technological conditions of production. Such models can be static or dynamic. Static LP models solve the systems of equations for optimal solutions in relation to a single year, while dynamic LP models explain the optimal growth path over the entire plan period.

Decentralised models have sector or project level variables which are used to prepare models for individual sectors or projects. Such models are useful in the early stages of a country's economic development when information is available for only individual sectors or projects.

The usefulness of planning models in actual plan-making are: "(a) to provide a frame for the checking of the consistency or the optimality of the official plan targets; (b) to provide a frame for the actual setting of targets; (c) to provide a frame for the evaluation and selection of projects; and (d) to provide an insight into the structure of the economy and its dynamics to help better policy decisions."³⁸

³⁷For details of Mahalanobis and some other models built for Indian plans, refer to chapter 32.

³⁸Ashok Rudra, *Indian Plan Models*, p. 201.

Chapter 53

SHADOW PRICES

INTRODUCTION

In underdeveloped countries, for project evaluation and programming the distribution of factors on the basis of market prices is imperfect because there exist fundamental disequilibria which are reflected in mass unemployment at existing wage levels, in the deficiency of funds at existing interest rates and in the scarcity of foreign exchange at the prevalent exchange rate. In such a situation, the equilibrium level of wages would be much below the market wage, the equilibrium interest rates would be higher than their market rates, and the equilibrium rate of exchange would be lower than its market rate. In order to overcome these difficulties J. Tinbergen, H B. Chenery and K S Kretschmer have emphasized the use of *shadow or accounting prices*.

Need For the Use of Shadow Prices

The price mechanism operates imperfectly in underdeveloped countries. Market prices do not correctly reflect relative scarcities, benefits, and costs. This is because perfect competition is entirely absent; structural changes do not respond to price changes; institutional factors distort the existence of equilibrium in the product, labour, capital and foreign exchange markets; and prices fail to reflect and transmit the direct and indirect influences on the supply side and the demand side. Markets are not in equilibrium due to structural rigidities. Labour cannot be usefully employed because of the shortage of other cooperant factors. The rate of interest understates the value of capital to the economy. And disequilibrium persists in the balance of payments which cannot be reflected in the official rate of exchange. For instance, in such economies wages are much lower in the non-organized agricultural sector while they are even higher than the opportunity cost of labour in the industrial sector where labour is organised in strong trade unions. In the capital market, the market rate of interest is much higher than the bank rate, and the current rate of foreign exchange is much lower than in the black market. Thus "market prices, particularly those of the factors of production, form a very imperfect guide to resource allocation in underdeveloped economies, because there exist fundamental d-

equilibria which are reflected in the existence of massive underemployment at present levels of wages, the deficiency of funds at prevailing interest rates and the shortage of foreign exchange at current rate of foreign exchange."¹ To overcome these problems, the use of shadow prices has been suggested by economists for the allocation of resources in development planning, for evaluating projects and as a device in programming. To conclude with Streeten, "The call for the use of shadow prices (or accounting prices) in planning for development stems from the obvious fact that actual market prices do not reflect social benefits and social costs. Some are fixed by administrative fiat. Others are 'free', but influenced by restrictive practices or monopolies. Others again are influenced by quantitative controls. The shadow price is the price which would prevail if prices were equilibrium prices...."

The fixation of shadow price for irrigation water is illustrated in Fig. 53.1. The supply and demand for irrigation water is taken on the horizontal axis and price in the accounting period is taken on the vertical axis.

In the initial accounting period, OQ_1 quantity of water is needed by the farmers of the area. But the government is supplying only OQ_2 quantity of water from the irrigation project at OP_1 price. In the next accounting period, the government may set the price equal to marginal cost or charge the price of irrigation water too low as part of its strategy of regional development. After the low price OP_2 is charged by the government, the demand for irrigation water will exceed its supply.

In such a case the government may

adopt the policy of rationing of water. It may ask each farmer to limit their land-area for irrigating. In the next accounting period, the government uses OP_s as the shadow price which is the equilibrium price when OQ_s of irrigation water is supplied and demanded.

Meaning of Shadow Prices

Shadow prices reflect intrinsic or true values for factors or products.

¹UN, ECAFE. "Criteria for Allocating Investment Resources among Various Fields of Development in Underdeveloped Countries," *Economic Bulletin for Asia and Far East*, June 1961.

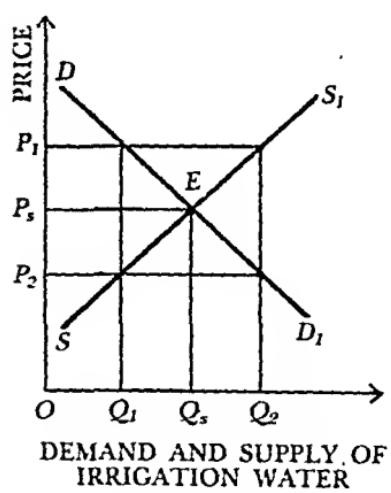


FIG. 53.1

J. Tinbergen defined them for the first time in 1954 in these words: "Shadow Prices are prices indicating the intrinsic or true value of a factor or product in the sense of equilibrium prices. These prices may be different for different time periods as well as geographically separate areas and various occupations (in the case of labour). They may deviate from market prices."² In 1958, Tinbergen defined shadow prices as those that correspond to intrinsic values and "that would prevail if (i) the investment pattern under discussion were actually carried out; and (ii) equilibrium existed on the markets just mentioned (i.e., labour, capital, foreign exchange markets)".³ This definition is clear and exhaustive, but is silent about the behaviour of accounting prices over time.

A UN report defines shadow prices in terms of the opportunity cost of the factor or product. The shadow price of an output such as capital labour or foreign exchange represents its "opportunity cost" or the loss to the economy that would result from a reduction in its supply by one unit. A factor that is expected to be in short supply should have an accounting price higher than its market price, while one that is surplus should have a valuation that is lower than its market price.⁴ A. Quayyum, however, defines shadow prices in terms of the marginal productivity of factors. In his words, accounting prices are the values of the marginal productivity of factors when a selection of techniques has been made which produces the maximum possible volume of output, given the availability of resources, the pattern of final demand and the technological possibilities of production.⁵ It would require the calculation of the marginal productivity of factors by the government manipulating the system of subsidy and taxation in such a way that the supply prices of factors to the producers equal the value of their marginal productivity. E.J. Mishan gives the simplest definition in these words, "A shadow or accounting price... is the price the economist attributes to a good or factor on the argument that it is more appropriate for the purposes of economic calculation than its existing price if any."⁶

Thus there is hardly any unanimity over defining accounting prices and the different concepts present so many difficulties in their calculation that the concept becomes ambiguous.

Determination of Shadow Prices

The determination of shadow prices can be done through the general

² *Investment Criteria and Economic Growth*, (ed.) M. Millikan, 1955

³ *The Design for Development*, p. 39.

⁴ *Formulating Industrial Development Programmes*, 1961

⁵ *Theory and Policy of Accounting Prices*, 1959

⁶ *Cost-Benefits Analysis*, 1971.

rate of interest becomes very complicated.

However, the appropriate formula for the calculation of the shadow rate of interest for the economy is: (see page 529)

where R is the shadow rate of interest, G is the rate of growth, S_p is the savings rate of profit receivers, P_y is the share of profit in total income, and S_w is the savings rate of the wage earners.

Assuming $G=5$ per cent, $S_p=25$ per cent, $P_y=50$ per cent, and $S_w=5$ per cent, the shadow rate of interest

$$R = \frac{5}{0.25 + \frac{1 - 0.5}{0.5} \times 0.05} = \frac{5}{0.3} = 16.6 \text{ per cent}$$

(b) *Determination of the Price of Labour.* The determination of the shadow price of labour is a difficult problem because labourers differ in efficiency. Therefore shadow price of labour cannot be the same for both the unskilled and skilled labour and for different types of skilled labour. There has to be a different shadow price for different types of labour because labour is not like other factors. In underdeveloped countries there is surplus labour in the rural areas having almost zero marginal product. But its shadow price cannot be assumed to be zero, it should be positive and provide a minimum subsistence level when such labour is employed on construction works. "But even if the marginal product of labour is less than the wage (or subsidized income), it does not necessarily follow that one should use a shadow price for labour lower than the wage. This is because wage earners tend to consume most or all the wages which they are paid. Thus...the payment of wages constitutes a real cost to the economy, even if there is no alternative employment for labour." Therefore, some economists are of the view that the accounting price for labour can be fixed anywhere above the zero marginal product of labour, and with the increase in the marginal product of labour its accounting price can also be raised. But, according to the UN experts, assuming no surplus of skilled labour but ample supplies of agricultural and unskilled labour the accounting prices of different kinds of skilled labour can be based on the cost of moving workers from villages to industrial areas, providing them with houses and other facilities, and training them.⁸

(c) *Determination of the Rate of Foreign Exchange.* The shadow price of foreign exchange is essential for underdeveloped countries suffering from balance of payments difficulties. An artificial equilibrium is achieved in the balance of payments by fixing a higher shadow rate of

⁸UN, ECAFE.

exchange than the official rate of exchange. "In an optimum development plan, the accounting price of foreign exchange would be equal both to the incremental cost of earning foreign exchange through exports and to the incremental cost of saving foreign exchange through import substitution. The former may be easier to estimate in many cases because there are relatively few potential exports, at least in the near future in underdeveloped countries." For this, weight is attached to the cost of foreign exchange in the project. If say, "the accounting price of foreign exchange is 50 per cent higher than its market value, the net effect of a project on the balance of payments should be given a weight of .5 in addition to the effect on the national income. This is equivalent to valuing all foreign exchange costs and earnings at a price of 1.5."⁹ According to Dr. Little, Israel is the only developing country in which the accounting price of foreign exchange is estimated in this way.¹⁰ It is not essential that every project should be weighted equally because the foreign exchange component of each project is different.

As an alternative, it is suggested that the demand for and the supply of foreign exchange should be computed which should then determine the rate where the two equilibrate. But this procedure is not practicable in developing economies where the foreign exchange requirements differ sector-wise and project-wise. Further, a single shadow rate of exchange cannot be applied over time. It will have to be reviewed and raised at different points of time on the basis of the 'black' and 'free' rates of exchange, because the market for some important international currencies like the dollar and the sterling is imperfect. Professor Tinbergen suggests the calculation of the shadow rate of foreign exchange based on the 'black' and 'free' rates of exchange. If the official (free) exchange rate is Rs 7.5 a dollar and the black rate is Rs 15 a dollar and the conversion of the official rate is four times as great as that at the black rate, then the shadow rate would be the weighted average

$$\frac{4 \times 7.5 + 1 \times 15}{5} = 9$$

Rs 9 per dollar would then be the most serviceable shadow rate instead of the official rate of Rs 7.5.

Difficulties of Shadow Prices

Apart from certain difficulties already mentioned in the determination of shadow prices for capital, labour and foreign exchange, there are

⁹Ibid.

¹⁰I.M.D. Little, "Project Analysis in Relation to Planning in a Mixed Economy," in *Development Problems*, OECD, Paris, 1967.

other difficulties of a general nature.

First, the calculation of shadow prices pre-supposes the availability of data. But adequate data are not easily available in less developed countries.

Second, in order to establish the intrinsic value of a factor or product requires the existence of full equilibrium in all markets. In an underdeveloped economy which is characterized by a number of fundamental disequilibria, the knowledge of full equilibrium conditions for the entire economy is not possible. Thus the notion of shadow prices corresponding to intrinsic values is arbitrary.

Third, the assumption of full employment equilibrium in the whole economy makes the concept of shadow prices indeterminate. It requires a complete knowledge of demand and supply functions which are based on the existing social institutions in the economy. "Land prices will depend upon the system of land tenure and on agricultural policy generally. The supply price of labour will depend upon the motivation and education of potential workers, on acceptability of employing women and on the attitudes to different kinds of work. The price of capital will depend upon degrees of monopoly in the economy."¹¹ Thus shadow prices are difficult-to ascertain under the existing institutional framework of underdeveloped countries.

Fourth, another difficulty arises with regard to the *time dimension*. The concept of shadow prices is static and timeless, for shadow prices are used to overcome the difficulties involved in project evaluation and programming when factor prices change over time. All inputs and outputs are valued at fixed shadow prices in such cases. This is not realistic because, as Tinbergen himself pointed out, "the realization of investment pattern will itself influence these *intrinsic* values, but only after some time, since investment processes are essentially time-consuming."¹² If accordingly, labour, capital, foreign exchange and other products are assigned different shadow prices, they may give contradictory results in accordance with the time-period considered. Hence the concept of shadow prices remains essentially a static one.

Fifth, if shadow prices are calculated in terms of Quayyum's definition, they require the calculation of marginal productivity of factors by the government and the manipulation of the system of subsidy and taxation in such a way as to equate the supply prices of factors to the value of their marginal productivity. But it is not easy to calculate the marginal productivity of factors (especially of capital and labour), and producers' response to changes in taxes and subsidies. Thus the shadow

¹¹W.A. Lewis, *op. cit.*

¹²I. Tinbergen, *op. cit.*

prices based on marginal productivity, are also indeterminate.

Sixth, another practical difficulty that arises is that of using shadow prices in the economy where the private enterprises buy inputs and sell outputs at market prices. The government, on the other hand, uses shadow prices for the evaluation of its projects but buys all inputs at market prices and sells outputs at competitive market prices where she does not possess a monopoly.

Seventh, the determination of shadow prices is difficult in the case of projects with high capital-intensity and which are substitutes and complementary to each other. Suppose there are two projects in which the input of one is the output of the other, and vice-versa. In such cases the determination of the accounting prices of the inputs of labour, capital and foreign exchange will not only be difficult but impossible because the decisions about the construction plans of the two projects cannot be the same.

Eighth, often prices of such services as electricity and transport are regulated by the government, and are not fixed on the basis of social opportunity cost. "For example, the prices of electricity used in feasibility studies of industrial projects in many developing countries are derived as an average charge of a two-part tariff. Since a two-part tariff charges a consumer according to his individual demand, rather than the system peak demand, it will fail to reflect the long-run incremental cost (hence the social opportunity cost of electricity)."¹³

Conclusion. Professor Myrdal in his "Asian Drama" regards shadow prices as "utterly unreal and other worldly in concept, particularly in underdeveloped countries like those in South Asia.. as it is recognised that they cannot be definitely ascertained . . This abstract and metaphysical concept cannot help to solve the theoretical and practical problems facing South Asian planners. It stands out as a typical example of the pseudo-knowledge, given a learned and occasionally mathematical form, that unfortunately has formed a major part of the contribution of Western economies to the important tasks of ascertaining the facts in underdeveloped countries and creating a framework for policies designed to engender and direct development."¹⁴

Uses of Shadow Prices

Despite these difficulties shadow prices possess the following uses:

1. **In Project Evaluation.** The use of market mechanism for the determination of product and factor prices is not a perfect and correct method because it leads to a wrong allocation of resources. In

¹³Ajit K. Dasgupta, op. cit., p. 92

¹⁴Asian Drama—An Enquiry into the Poverty of Nations, pp. 168-69. Italic mine

underdeveloped countries, the market mechanism operates imperfectly due to a number of economic and social obstacles. Therefore, it is not possible to have project evaluation on this basis. Even otherwise, the rise in prices being inevitable during the process of planning, it is therefore not possible to correctly assess the costs and benefits of a project. "Accounting prices are a convenient tool for evaluating investment projects in different sectors of the economy...A factor that is expected to be in short supply should have an accounting price higher than its market price, while one that is surplus should have a valuation that is lower than its market price."¹⁵

Thus shadow prices are used for evaluating the effects of a project on the national income which are also termed as external effects. This is often done on the basis of the profitability criterion or cost-benefit analysis where both costs and benefits are calculated at accounting prices. Sometimes even rough estimates of shadow prices also help. "They may, for example, show how sensitive the priority figures of a number of projects are to changes in such accounting prices. They may enable us to classify products in groups that are attractive under certain specified emergency circumstances...It may nevertheless have a rough guide for emergency cases."¹⁶

2. In Public Policy. The success of development planning depends upon the correct operation of public policy. Shadow prices are intrinsic prices on whose correct determination depends the success of a plan to a considerable extent. In a mixed economy, the public sector cannot be 'developed unless the prices of labour, capital, foreign exchange and other inputs are determined in accordance with shadow prices. Though very often shadow prices are rough estimates, yet the state should try to bring market prices close to the shadow prices of products and factors through fiscal, monetary and other measures for the successful implementation of the plans.

3. In Programming. Shadow prices have the greatest importance in programming. Programming is the working of the economy in a rational, consistent and coordinated manner. The main aim is to maximise the national income through time. For this, it makes an optimum use of the amount and composition of investment, and adopts public investment, fiscal, monetary and commercial policies. In the context of underdeveloped countries, programming implies the optimum use of investment whereby there is no difficulty in the production process. But in reality, the difficulties of supplies of factors, rise in market prices and the scarcity of foreign exchange is apparent in such

¹⁵UN, ECAFE, *op. cit.*

¹⁶J. Tinbergen, *op. cit.*

economies. All such difficulties are overcome with the help of shadow prices, and fiscal, monetary and other policies help in bringing the market prices of factors, products and foreign exchange in conformity with their shadow prices and thus make programming a success.

In the case of linear programming for a wide class of problems, the variables in the dual solution can be interpreted as shadow prices or accounting prices, in as much as they are the 'correct' input prices being consistent with the maximum value of the primal objective function. .. When these shadow prices are imputed to the given inputs, the value of the dual objective function is minimised. It can then be interpreted as the minimum input cost, subject to the constraints, and to the requirement that no profits...be made. These shadow prices are, therefore, no different from the factor prices that would emerge in perfectly competitive equilibrium in which product prices are exogenously determined."¹⁷

Thus the technique of shadow prices serves as a useful computational shorthand in devising a relatively efficient system of project evaluation and helps in achieving success in programming and public policy.

¹⁷E J. Mishan, *op. cit.* Italics mine.

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¹⁷E.J. Mishan, op. cit. Italics mine.

Chapter 54

PROJECT EVALUATION AND COST-BENEFIT ANALYSIS

MEANING

Project evaluation is the most specialized planning process which involves systematic, objective and comprehensive appraisal of development programmes for individual commodities and projects. It implies an appraisal or assessment of a project as to its operational efficiency technically, economically, financially and managerially. It involves a probe by a group of outside experts into the working of a project, to find out its achievements and weaknesses, and to suggest ways and means of overcoming the weaknesses to improve its operation. Project "evaluation thus refers to the procedures of fact-finding about the results of planned social action which in turn move the spiral of planning over upward. It is the proper methodological accompaniment of rational action."¹

Project evaluation is an integral part of any development programme in order to assess its success or failure and to point out further lines of improvement. It is a process to evaluate the rate of return on a project, its social profitability and its side effects on the growth rate of population, on employment, labour and management training and on rate of reinvestment. Further, it helps to assess the impact of the new project on the people of the area especially on their social and economic conditions. "Evaluation is, therefore, an essential aid to policy. It may be considered to be a branch of research which is oriented primarily to the needs of an action programme."² "Project evaluation utilizes principles similar to those...for the evaluation of industrial sectors, but it requires more extensive study of individual elements. Whereas sector analysis is applied only to the typical cost and demand conditions in the industry, project analysis takes into account a variety of supply and demand factors that are peculiar to the commodities and production technique under consideration."³

¹Hyman, Wright and Hopkins, *Applications of Methods of Evaluations*, 1962. Italics mine.

²Second Five Year Plan, 1956.

³UN, ECAFE, *Formulating Industrial Development Programmes*, 1961.

Its Stages

It involves four stages: to review the situation before the project is actually started; to make appraisal when the project is in operation in order to find out how much has been accomplished and what remains to be accomplished; to suggest ways and means to improve its operation further and to plug loopholes; and *lastly*, to evaluate the ends achieved by the project when it is complete and is in full operation.

Methods of Evaluation

In the methods of project evaluation, the usual stages are: (a) the description of the technical and economic characteristics of each project; (b) the estimation of the influence of the project on the economy, both during the construction period as well as during the operational period, when the investment is completed and the newly productive capacity is in operation; (c) the evaluation of the consequences of the project which may be direct or indirect. The direct effects consist of the immediate contributions to production within the sector of the project while the indirect effects are those in sectors vertically connected with the sector, either preceding or following, because for their direct technological links; and (d) the formulation of the criterion for the selection of the projects.⁴

COST-BENEFIT ANALYSIS⁵

In appraising projects from the national viewpoint the most appropriate and popular method is the cost-benefit analysis. The analysis is the most scientific and useful criterion for project evaluation. It helps the planning authority in making correct investment decisions to achieve optimum resource allocation by maximising the difference between the present value of benefits and costs of a project. It involves the enumeration, comparison and evaluation of benefits and costs. This implies weighing of the returns against the costs involved in a project. Thus the cost-benefit analysis "purports to describe and quantify the social advantages and disadvantages of a policy in terms of a common monetary unit." Its objective function is the establishment of net social benefit. This objective function can be expressed as $NSB = Benefit - Costs$, where benefits and costs are measured in terms of 'shadow' or 'accounting' prices of inputs and outputs instead of in actual market prices.⁶

⁴H C. Bas in "Regional Economic Planning, Techniques of Analysis for Less Developed Areas", *UN Manual on Economic Development Projects*, 1958

⁵American economists use the term Benefit-Cost.

⁶For reasons refer to the previous chapter

Criteria for Cost-Benefit Analysis

There are four benefit-cost criteria discussed by the US *Sub-Committee on Benefits and Costs*. They are ' $B-C$ ', ' $B-C/I$ ', ' $\Delta B/\Delta C$ ', and ' B/C ', where B and C refer to benefits and costs respectively, I relates to direct investment and Δ is incremental or marginal.

Of these, the formula $B-C/I$ is "for determining the total annual returns on a particular investment to the economy as a whole irrespective of to whom these accrue." Here I does not include the private investment that may have to be incurred by the beneficiaries of the project, such as the cultivators from an irrigation project. If the private investment happens to be very large, even a high value of $B-C/I$ may be less beneficial to the economy. Thus this criterion would not give satisfactory results. The second criterion of $\Delta B/\Delta C=1$ is meant to determine the size of a project that has already been selected and is not for selecting a project. The adoption of the $B-C$ criterion would always favour a large project, and make small and medium size projects less beneficial. Thus this criterion can only help in determining the scale of the project on the basis of the maximisation of the difference between B and C . But the best and the most reliable criterion for project evaluation is B/C . In this criterion, the benefit-cost ratio is the measure for the evaluation of a project. If $B/C=1$, the project is marginal. It is just covering its costs. If $B/C>1$, the benefits are more than costs and it is beneficial to undertake the project. If $B/C<1$, the benefits are less than costs and the project cannot be undertaken. The higher the benefit-cost ratio, the higher will be the priority attached to a project. Since capital and other investible resources are scarce in underdeveloped countries, it can maximise output by using them on a project so that its benefit-cost ratio is higher than that of the next alternative project.

The above formula does not take into account the 'time horizon' of the project. As a matter of fact, *future* benefits and costs cannot be treated at par with *present* benefits and costs. Therefore, the appraisal rules for project evaluation require discounting of future benefits and costs because society prefers the present to the future. For this purpose, economists have devised a number of 'decision rules' or criteria. But we shall confine ourselves to the present value criterion and the internal rate of return criterion.

The Net Present Value Criterion. It is an important criterion used for project evaluation. Net Present Value (NPV) is equal to the present value of benefits *minus* the present value of operating and maintenance costs *minus* initial outlay. This criterion is also expressed as the net present value of benefits criterion so that Net Present Value of

Benefits = Gross Present Value of Benefits – Gross Present Value of Costs. A project is socially profitable if the $NPV_B > 0$. If there are a number of mutually exclusive projects, the project with the highest net present value of benefits will be chosen.

But the explanation of the NPV criterion in terms of benefits and costs is not a correct method for project evaluation because it neglects the time horizon. Capital investments give benefits after a lapse of some time. Therefore, future benefits and costs cannot be equated with present benefits and costs. Since society gives preference to the present over the future, it becomes essential to discount future benefits and costs of projects. The discount factor is expressed as

$$D = \frac{1}{(1+i)^t}$$

where i is the social discount rate and t is the time period

Thus

$$NPV = \left[\frac{B_1}{(1+i)} + \frac{B_2}{(1+i)^2} + \dots + \frac{B_n}{(1+i)^n} \right] - \left[\frac{C_1}{(1+i)} + \frac{C_2}{(1+i)^2} + \dots + \frac{C_n}{(1+i)^n} \right]$$

where $B_1, B_2 \dots B_n$ are series of gross present benefits in years 1, 2 ... n; $C_1, C_2 \dots C_n$ are series of gross present costs in years 1, 2 ... n; i is the social rate of discount for annual compounding.

In making a choice among projects either of the two rules may be followed.

1. Only those projects should be selected in which the present value of benefits exceeds the present value of costs. Where symbolically

$$\frac{B_1}{(1+i)} + \frac{B_2}{(1+i)^2} + \dots + \frac{B_n}{(1+i)^n} >$$

$$\frac{C_1}{(1+i)} + \frac{C_2}{(1+i)^2} + \dots + \frac{C_n}{(1+i)^n}$$

2. All projects where the ratio of the present value of benefits to the present value of costs is greater than one. Expressed symbolically

$$\frac{\frac{B_1}{(1+i)} + \frac{B_2}{(1+i)^2} + \dots + \frac{B_n}{(1+i)^n}}{\frac{C_1}{(1+i)} + \frac{C_2}{(1+i)^2} + \dots + \frac{C_n}{(1+i)^n}} > 1$$

The NPV criterion is considered as the most appropriate rule for project evaluation.

The Internal Rate of Return Criterion. This criterion refers to the percentage rate of return implicit in the flows of benefits and costs of projects. Marglin defines the internal rate of return (IRR) as the discount rate at which the present value of return minus costs is zero.⁷ The formula for the calculation of IRR is

$$\frac{B_1 - C_1}{(1+r)} + \frac{B_2 - C_2}{(1+r)^2} + \dots + \frac{B_n - C_n}{(1+r)^n} = 0$$

where r is the internal rate of return. In the case of mutually exclusive projects that project should be selected which has the highest rate of return.

But this criterion has certain *limitations*. *First*, once a rate of return is assumed for the calculation of the profitability of a project, it is not possible to change it. *Second*, it is difficult to calculate the rate of return on a long-gestation project which does not yield benefits for a number of years. *Third*, if projects are mutually exclusive, this criterion favours that project which has a lower capital cost than others. Thus it cannot be applied to highly capital-intensive projects. *Fourth*, the use of IRR for public investment does not lead to correct decisions because the definition of IRR implies that intermediate receipts and outlays are also discounted at the internal rate. But it is not possible to discount intermediate benefits and costs of public investment at the internal rate of return. *Fifth*, there are often such projects on which the entire investment outlay cannot be made in the first period. It becomes difficult to calculate IRR in all such cases. *Sixth*, the IRR criterion is suitable for such investment projects which are wholly independent of others. The different projects can then be ranked according to their internal rates of return and the project with the highest IRR is chosen first and the other projects with lower IRR are selected according to their ranks. But the fact is that public investments are not independent of each other. Often they are alternatives. Therefore, it is difficult to make a choice between two alternative investments on the basis of their alternative internal rates of return. *Seventh*, Layard points out the problem of capital rationing where projects cannot be selected on the basis of ranking in order of rate of return. Such projects can only be selected on the basis of their net present value.⁸

In fact, IRR depends on the social rate of discount. If the net present values of two alternative projects are given, the choice of the project

⁷S.A. Marglin, *Public Investment Criteria*, 1967.

⁸Richard Layard, *Cost-Benefit Analysis*, 1972.

will depend on the discount rate. This is illustrated in Figure 54.1 where the rate of discount is measured along the horizontal axis and NPV on the vertical axis. The curve AA' depicts investment of project A and the curve BB' of the project B. The IRR of project B is higher than that of project A because the discount rate Or is higher than Or' . At Or_2 , the IRR of both the projects is equal. But if the discount rate falls below Or_2 , project A will be chosen because its NPV is higher by ba . Making a choice between two projects on the basis of changes in the discount rate is called switching and reswitching.

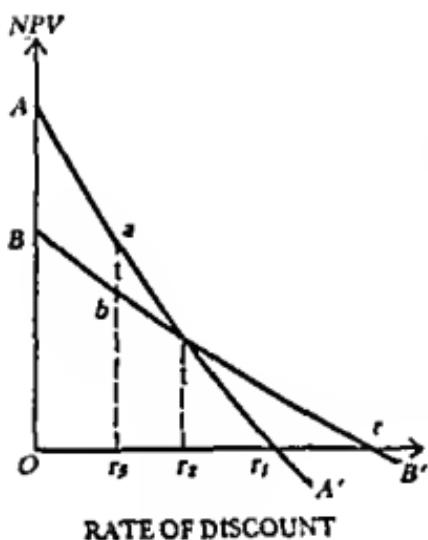


FIG. 54.1

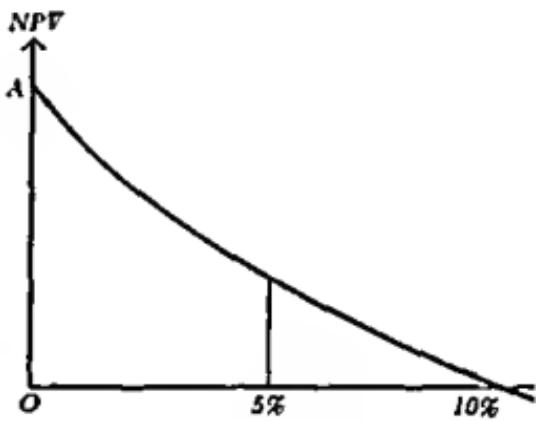


FIG. 54.2

Relation between NPV and IRR. The relation between NPV and IRR is depicted in Figure 54.2. As NPV falls, the discount rate increases and a situation arises when NPV becomes negative. The rate at which NPV changes from positive to negative is the IRR. That project will be selected whose IRR is higher than its discount rate. So the right criterion for the choice of a project is $r > i$. This is illustrated in Figure 54.2 where IRR is taken as 10 per cent and the discount rate as 5 per cent in the case of project A. This project will be selected for development so long as its $NPV > 0$ and $r(10\%) > i(5\%)$. If two projects are complex, these two criteria can give different results. But for the majority of projects, they are interchangeable. However, difficulties arise when two or more projects have to be compared and their lengths of life and capital investments differ. Of the two criteria, NPV is more commonly used for project evaluation in private and public sectors. But the NPV criterion is technically superior, since the

IRR can give an incorrect result in special circumstances.⁹

The Social Rate of Discount. Whether the planners use the NPV or IRR criterion, a rate of discount is needed for discounting all costs and benefits. There is considerable controversy over the choice of such a rate. The controversy arises because the discount rate is required to solve two problems: first, proper allocation of resources between the public and private sectors; and second, the allocation of resources between the provision of present and future goods and services. The rate used to solve the second problem is called the social discount rate or social time preference rate.

The social discount rate is the premium which the society puts for preferring the present consumption to future consumption. This is explained in terms of Figure 54.3 where the present consumption C_1 is

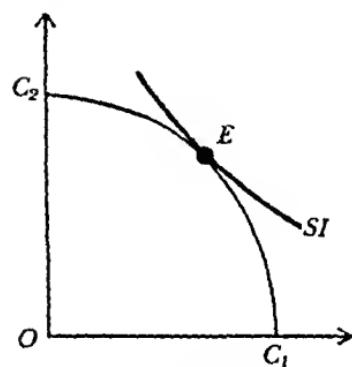


FIG. 54.3

taken on the horizontal axis and the future consumption C_2 on the vertical axis. C_1C_2 is the transformation frontier or the investment possibility curve. It consists of a series of projects arranged from right to left in order of their rate of return—the cost is the sacrifice of present consumption and the return is the gain of consumption in the future. The society will choose from the various investment possibilities so as to reach its highest social indifference curve SI .

The society reaches an optimal position with regard to its sacrifice of present consumption and invests it for gain in the future consumption when its transformation curve C_1C_2 equals its social indifference curve SI at point E . It is to be noted that the slope of the transformation curve represents the rate of return on investment and the social indifference curve represents the rate of time preference. So the social discount rate is determined with the equality of the rate of return on investment and the rate of time preference at point E .

The social rate of discount is a constant rate over time. The choice of a discount rate affects the projects to be undertaken. "A discount rate of 5 per cent might well lead to twice as much investment as one of 10 per cent, together with equivalent reduction in consumption."¹⁰ If the discount rate is high, short-period projects with higher net benefits are preferred. On the contrary, when the discount rate is low, long-period projects with lower net benefits are selected.

⁹I.M.D. Little, 'Project Analysis in Relation to Planning in a Mixed Economy', in *Development Problems*, 1967.

¹⁰Richard Layard, *op. cit.*

The problem is: How a social discount rate is chosen? This rate cannot be the market rate of interest in a mixed economy because of uncertainties and imperfections of capital markets. There are varieties of securities with corresponding multiplicity of interest rates. Therefore, the social discount rate should equal the government's borrowing rate on long-term securities because these securities are essentially riskless. That is why the majority of economists measure the social rate of discount at this rate. But critics argue against selecting the long-term rate on government securities as the social discount rate. According to them, there are numerous borrowing rates on government securities relating to different time periods. The problem is which rate to choose as the social discount rate. Again, government borrowing rates are influenced by such factors as the monetary policy which is not relevant for the choice of a social discount rate. Lastly, the choice of such a social discount rate would lead to the very awkward problem that different rates of interest would be used in the public and private sectors. There is then likely to be considerable inefficiency in the allocation of funds inside the investment sector—in the sense that if the government is, say, responsible for electricity and the private sector for oil, inferior projects of the former kind will supplant superior projects of the latter kind.¹¹ Economists, therefore, reject the use of market rates to reflect the social discount rate.

Pigou,¹² followed by Dobb,¹³ regards the use of social time preference rate as "pure myopia." He alleges that people are victims of "defective telescopic faculty" that is why they prefer present consumption to future consumption. They have risk-of-death time preference. Pigou and Dobb reject this view on the ground that society is a continuous entity and it has a collective responsibility for future generations. So they favour a zero social time preference rate because the present and future should have equal weights in the estimation of the society.

But economists do not accept Pigou-Dobb view. According to Marglin¹⁴ this view is an "authoritarian rejection of individual preferences." Sen¹⁵ and Eckstein¹⁶ point out that a rational fear of death is sufficient for people to have a positive social time preference rate.

¹¹A R Prest and R Turvey, "Cost-Benefit Analysis: A Survey," *EJ*, Vol. 75, 1965

¹²A C Pigou, *The Economics of Welfare*, 4^e, 1932

¹³M. Dobb, *An Essay on Economic Growth and Planning*, 1960

¹⁴S A Marglin, "The Social Rate of Discount and the Optimal Rate of Investment," *OJE*, Vol. 77, 1963

¹⁵A K Sen, "Optimising the Rate of Saving," *EJ*, Vol. 71, 1961

¹⁶O Eckstein, "A Survey of the Theory of Public Expenditure," in J V Schanan (ed.), *Public Finance*, 1961

Hirschleifer¹⁷ and others use the concept of social opportunity cost to measure the social discount rate. "The social opportunity cost is a measure of the value to society of the next best alternative use to which funds employed in the public project might otherwise have been put." The next best alternative use of funds is investment in the private sector. If they earn a rate of 6 per cent, the public investment must also earn a rate of 6 per cent or more. Thus the social discount rate is 6 per cent. Any other rate than this would lead to malallocation of resources. If a public project earns 4 per cent, it should not be undertaken.

The social opportunity cost method of calculating the social discount rate is not free from certain limitations. To depend on the estimates of the private sector is misleading because different industries adopt different methods for estimating their rates of return. Thus it is difficult to find a rate of return which may measure the social opportunity cost of funds. According to Feldstein, the social opportunity cost depends on the sources of particular funds, it must also reflect the social time preference function. He, therefore, suggests a method of combining the two. The procedure is to allow for the social opportunity cost of funds directly by placing a shadow price on the funds used in the project and to make all intertemporal comparisons with a social time performance rate.¹⁸ Mishan, on the other hand, has suggested that if the government has the power to invest in the private sector, than the social opportunity cost rate can be used as a social discount rate.¹⁹

Marglin²⁰ and other economists have argued for a synthetic discount rate. They move on this presumption that the social time preference rate is less than the social opportunity cost rate. Therefore, there will be underinvestment in the economy which requires a synthetic discount rate for public investment. The synthetic discount rate is some weighted average of the social time preference rate and the social opportunity cost rate.

Baumol²¹ does not agree with Marglin that there should be a synthesis of the two rates. He regards the choice of rates as indeterminate because of the existence of risk and institutional barriers which will prevent the two rates to be in equilibrium. On the other hand, Pearce suggests that the correct answer to the choice of a social discount rate does not lie in the selection of a *single* rate, but in the use of both the social time preference and the social opportunity cost rates according to (a) the

¹⁷J. Hirschleifer et al. *Water Supply*, 1960.

¹⁸M.S. Feldstein, "The Social Time Preference Discount Rate in Cost-Benefit Analysis," *E.J.* Vol. 74, 1964.

¹⁹E.J. Mishan, "Criteria for Public Investment," *J.P.E.* Vol. 75, 1967.

²⁰S.A. Marglin, *op. cit.*

²¹W. Baumol, "On the Social Rate of Discount," *A.E.R.* Dec. 1968.

type of benefits yielded, and (b) the type of forgone expenditure. In Figure 54.3, the social time preference rate is in equilibrium with the social opportunity cost rate at point *E*. Pearce concludes that it will not matter which rate is chosen. If equilibrium conditions prevail, the necessity for the estimation of a synthetic discount rate disappears.²²

(a) Evaluation on the Basis of Benefits. A project is evaluated on the basis of the benefits accruing from it. Benefits refer to the addition to the flow of national output accruing from a project. A project is beneficial to the extent it tends to increase the income of the people, increase in income being measured by the actual increase in production and consumption. Benefits may be real or nominal and direct or indirect.

Real Benefits. In cost-benefit analysis we are concerned with the real benefits rather than with the nominal benefits flowing from a project. A river valley project may increase irrigational facilities to the cultivators, but if at the same time the state levies heavy betterment levy on them, the benefit is nominal. For, whatever benefit accrues from the project it goes to the treasury. But if the same project, besides increasing irrigational facilities, raises the productivity of land per acre and leads to a number of other external economies whereby the level of real income of the farmers rises, then it is said to lead to real benefits.

Direct and Indirect Benefits. Direct benefits are those benefits which are immediately and directly obtainable from a project. They are the values of the immediate products and services for which costs have been incurred. A number of direct and immediate benefits can arise from a multipurpose river valley project such as flood control, irrigation, navigation facilities, the development of hydropower, etc. An indirect benefit is one which arises as a result of the direct benefits. A multipurpose project may also lead to certain side-effects. Indirect or secondary benefits are those benefits which are not direct benefits as a result of the activities undertaken in connection with the project. For instance, the construction of a new town may lead to the

laid. A new town, Nangal, has been started there which is the hub of the Nangal Dam has been developed mainly for irrigation purposes. Besides, as pointed out earlier, evaluation should take into account investment, on the growth of labour force and managerial talents.

²²D.W. Pearce, *Cost-Benefit Analysis*.

²³H.J. Branson, *Principles of Project Evaluation*.

side-effects which are more or less incidental to the direct benefits.

Tangible and Intangible Benefits. A project may also lead to tangible or intangible benefits. Tangible benefits are those which can be computed and measured in terms of money while intangible benefits cannot be measured in monetary terms. For example, benefits flowing from the Bhakra-Nangal Project are tangible and can be computed. Intangible benefits enter into individual valuations, for which there is neither a market nor a price. They may be positive or negative. The former are the scenic beauty and recreational value of the Bhakra Dam while the latter refer to the uprooting of the people as a result of the Dam.

(b) *Evaluation on the Basis of Costs.* Just as there are various forms of benefits, so there are various types of costs

Project Costs. They are the value of the resources used in constructing, maintaining and operating the project. They relate to the cost of labour, capital, intermediate goods, natural resources, foreign exchange, etc., including allowances for induced adverse effects.²⁴

Associated Costs. They are the value of goods and services needed beyond those included in the cost of a project to make the immediate products or services of the project available for use or sale. For example, the farmer's cost of producing the irrigated crop, other than any charge for water, would be his associated costs of producing that crop.

Real and Nominal Costs. Costs may be real or nominal. If a Block Samiti borrows from the people of the area for digging a canal, it is a case of nominal costs. For no real sacrifice is involved on the part of the people, money having been transferred to the Block Samiti from the people. But if the people of the block are asked to dig the canal themselves, it would be real cost for them.

Primary or Direct Costs. In cost-benefit analysis, we are concerned more with primary or direct costs. These are costs properly incurred for the construction, maintenance and execution of a project. And to make immediate products of the project available for use or sale.

Indirect or Secondary Costs. They are the value of goods and services incurred to provide indirect benefits of a project, viz., houses, school, hospital, etc., for the people working at the project site. They also include the costs of processing the immediate products of the project.

(c) *Importance of Data for Evaluation.* In project evaluation detailed data extending over a long period are required which may be divided into "an investment or gestation period" and "an operation or

²⁴For use of shadow prices in project evaluation, see 'Partial Equilibrium Method' in the chapter on 'Shadow Prices'.

production period." The project is completed in the first period and is used in the second period when production starts. The data describe the number of workers and other personnel involved, the amount of raw materials required and the quantity of the products expected to be produced, etc. These data are compared with similar projects elsewhere in terms of their costs and benefits. The data are also used to calculate the contribution of the project to national output, to the employment of labour, and to the health of the workers.

Conclusion. Thus in evaluating a project, we are to compute and compare its total direct benefits and the total direct costs. If it is found that the benefits are expected to be more than the costs, it will be beneficial to undertake the project, otherwise not. In order to arrive at the aggregate direct costs and benefits, *first*, data are collected and calculated on the physical quantities of goods and services produced; then *secondly*, on the physical quantities of goods and services consumed, *thirdly*, the money value of these goods and services is computed on the basis of price indices in different markets giving weights to inflationary and deflationary situations. Lastly, in calculating annual costs, due regard is to be taken of the durability of capital assets and their depreciation. Annual costs are calculated by dividing the total costs by the expected life of capital assets. Similarly, annual benefits are calculated by computing the money value of direct benefits flowing from the projects and deducting from it associated costs of the project.

Limitations of Cost-Benefit Analysis

However, limitations arise in cost-benefit analysis of measuring the present and future benefits from a project and costs incurred in obtaining these benefits.

1. Difficulties in Cost-Assessment. Cost assessment of project is however comparatively easy than benefit assessment. Cost estimates are made on the basis of the choice of techniques, locations and prices of factor services used. But market prices, particularly those of factors of production, form an imperfect guide to resource allocation in underdeveloped economies, because there exist fundamental disequilibria which are reflected in the existence of massive underemployment at present level of wages; the deficiency of funds at prevailing interest rates and the shortage of foreign exchange at current rates of exchange. The equilibrium level of wage rates will be considerably lower than market wages, while equilibrium interest rates will probably be much higher than market rates. To remove these difficulties, the use of "shadow" or "accounting" prices has been suggested by J. Tinbergen,²³ Chenery and K.S. Kretschmer.²⁴ These "shadow prices"

²³See the previous chapter for a detailed study.

values of factors of production. Like shadow prices, the concept of "shadow costs" has also been introduced to calculate the real costs of a particular project to society. Nowadays economists use shadow prices and costs in evaluating projects and determining which are worth undertaking and which are not.

2. Difficulties in Benefit Assessment. The assessment of benefits is, however, still more difficult due to the presence of the element of uncertainty in a new project as to the correct estimation of future price, demand and supply of its product. Another difficulty of measuring the benefit is the assessment of external economies. If the *presence* of external economies leads to the selling of the product at marginal costs rather than at average costs, a deficit will accrue. Efforts to cover this deficit through a levy on the consumer or the government budget make the assessment of benefits more vague. Thus according to Professor Lewis, "To calculate the true net social benefit of an investment calls for skepticism as well as skill. The figures submitted to governments almost always involve exaggerated optimism and double counting. If one uses low shadow wage in valuing labour, when calculating costs, one must not also, when calculating benefits, give extra credit to the project because it will relieve unemployment. Shadow pricing may be applied to costs or to benefits, the same item should not appear in both. Again annual values and capital values should not be added together."²⁶ But it is difficult to predict changes in shadow prices arising from the benefits of a project. The application of shadow prices might favour quick-yielding, labour-intensive, capital and import-light projects thereby undermining the establishment of long-term development projects.

3. Arbitrary Discount Rate. The assumed social rate of discount for any project is likely to be arbitrary. If an arbitrarily large discount rate is applied to calculate the net present value of benefits, it is not possible to effectively calculate the long-run results of a project. This equally applies to the internal rate of return of a project.

4. Neglects Joint Benefits and Costs. The above analysis of cost-benefit ignores the problems of joint benefits and joint costs arising from a project. We have seen above that a number of direct and indirect benefits flow from a river valley project. It is difficult to evaluate and calculate such benefits separately. Similarly, they involve joint costs which cannot be separated and hence calculated benefit-wise.

5. Ignores Opportunity Costs. The cost-benefit analysis also ignores the problem of opportunity cost. Griffin and Enos have found a way out when they state that if all prices reflected opportunity costs, all projects for which $B/C < 1$ would be chosen.

²⁶Development Planning, p. 258.

6. **Adjustment for Risk and Uncertainty.** The problem of adjustment for risk and uncertainty involved in the project also arises. This is done in three ways: at the time of calculating the length of project life, the discount rate, and by making due allowance in benefits and costs. It is better to use the Government borrowing rate. The Research Programme Committee of the Indian Planning Commission suggests 5 per cent as the productivity rate and 10 per cent as capital scarcity rate.

7. **The Problem of Externalities.** The side effects of a project are difficult to calculate in this analysis. There may be technological and pecuniary spill overs (or externalities) of a river valley project, such as the effects of flood control measures or a storage dam on the productivity of land at other places in the vicinity. It is difficult to calculate such external effects of a project.

Use of Cost-Benefit in Developing Countries

The cost-benefit analysis was developed in the United States for the appraisal of investments in irrigation and transportation projects. In LDCs, projects are often selected on an *ad hoc* basis and sufficient attention is not given to their evaluation in terms of costs and benefits. Since all public projects are related to the objectives of growth, they aim at maximising social welfare. Stephen Marglin²⁷ points toward three merits of cost-benefit analysis for such countries.

First, it helps in reducing differences in the marginal effectiveness of alternative measures for accomplishing such objectives as between irrigation and other means of raising agricultural production. Second, it helps in assessing the costs of fulfilling one objective in terms of benefits sacrificed with respect to others. Third, it has a political advantage in that, "it would be difficult for any particular group to distort project plans to serve its own interests if its consent, along with the consent of other relevant sections of the community, were obtained at the time of setting the criteria in advance of planning specific projects."²⁸

Another merit of the use of cost-benefit analysis is that it permits decentralised decision-making. Even if the public sector is small, no single authority can hope to handle the vast mass of technical information needed to decide on a number of specific projects. In order to calculate costs and benefits of each project, a separate authority is needed for each. This, therefore, necessitates decentralisation of decision making.²⁹

Again, the cost-benefit analysis is "a practical way of assessing the desirability of projects, where it is important to take a long view (*in the*

²⁷S. A. Marglin, *op. cit.*

²⁸Richard Layard, *op. cit.*

sense of looking at repercussions in the future, as well as the nearer future) and a wide view (in the sense of allowing for side effects of many kinds on many persons, industries, regions, etc.)."²⁹ As such, it is a highly useful tool for project evaluation in developing countries..

Despite these merits, the use of cost-benefit analysis is best with a number of difficulties in LDCs. They are discussed below:

(a) *Based on Conditions of Developed Countries.* This technique is based on the basic assumption that investment is made in a framework of economic stability and steady growth in a predominantly, capitalist competitive economy where prices are constant, wages are flexible, and factors are perfectly mobile and fully employed. Thus the need for state action is assumed away in it. Under the assumptions, direct benefits of the project valued at market prices reflect its social benefits'. But these assumptions make the application of cost-benefit analysis as a method of project evaluation unrealistic to underdeveloped countries. In such economies the assumptions of constancy of prices, the existence of full employment, perfect mobility of factors and flexibility of wages are unwarranted. Rather the aim of public investment is to start those development projects which aim at reducing unemployment, and underemployment, and increasing factor mobility so that structural disequilibrium in the economy is set right. Though efforts have been made to modify this analysis by including indirect benefits accruing from a project and imputing benefits and costs in terms of shadow prices, yet there is arbitrariness in choosing between the various indirect benefits. Eckstein and McKean, therefore, favour the use of macroeconomic planning methods instead of the cost-benefit technique for the evaluation of projects. But these methods cannot be applied to underdeveloped countries due to the lack of statistical data.

(b) *Difficulty of Obtaining Data.* In underdeveloped countries the task of obtaining data are one of the biggest hurdles. It is, therefore, not possible to distinguish the benefits accruing to the people with and without the project. The element of uncertainty and the difficulties of assessing externalities as noticed above, also stand in the way of correct assessment of benefits from a project. In certain cases both tangible and intangible benefits are difficult to assess. To what extent the supply of drinking water will benefit the residents of a town from a drinking water project or the building of an embankment to control floods cannot be measured accurately.

(c) *Difficulties in Cost Assessment.* Assessing the cost of a project is by no means easy either. Preliminary estimates of costs are prepared but they are either overestimated or underestimated. Rise in prices, shortage

²⁹A.R. Prest and R.Turvey, *op. cit.*

of raw materials and foreign exchange difficulties often stand in the way of accurate cost assessment. In the case of certain projects where *Shramdan* (voluntary labour) is made use of, the measurement of labour cost becomes still more difficult. In India, so many projects have been started hastily that it is not possible to assess their viability. According to professor Lewis, "Assessing the cost and benefit of new industrial enterprises is highly specialised work which is best left to experienced consultants. Without such specialised knowledge project analysis is bound to be wrong." Underdeveloped countries should develop such specialised agencies for evaluating all types of projects.

Use of Cost-Benefit Analysis in India

The first systematic attempt in India was made by D R. Gadgil by conducting a survey of the Godavari and Pravara canal systems in Maharashtra. This was followed by a study of the benefits and costs of the Hirakund Dam Project on the Mahanadi by Sovani and Nilkanth Rath (*Economics of Multipurpose River Dam* 1960). In 1958, the Planning Commission Research Programmes Committee headed by D.R. Gadgil initiated the study of the benefit-cost ratios of six irrigation projects: (i) The Sarda Canal in UP; (ii) The Tribeni Canal in Bihar, (iii) The Damodar Canal in West Bengal, (iv) The Gang Canal in Rajasthan; (v) The Cauvery Methur Project in Tamil Nadu, and (vi) The Nizam Sagar Project in Andhra Pradesh. Similar surveys had been conducted by Baljit Singh³⁰ for the Sarda Canal Project in UP, by K.N. Raj³¹ for the Bhakra Nangal Project in Punjab, by A.S. Charan³² of the West Banas Project in Rajasthan and by Ram Narain of the Jui Lift Irrigation Project in Haryana.³³

But there is no uniformity in the application of cost-benefit techniques in these studies. These studies have been made either on the basis of the 'before and after' technique or the 'with and without' technique. The before and after technique takes into account the benefits and costs before the introduction of the projects and compares the same with the benefits and costs that have resulted after the introduction of the project. The with and without technique makes a comparative study of the same area being benefited with irrigation facilities and without such facilities.

³⁰Baljit Singh, S. Mishra, *Benefit-Cost Analysis of the Sarda Canal*, 1965

³¹K.N. Raj, *Some Aspects of the Bhakra Nangal Project*, 1964

³²A.S. Charan, *Direct Primary Benefits and Costs of Irrigation Project Empirical Study of the West Banas Project in Rajasthan*, Ph. D. Thesis (Unpublished)

³³Ram Narain, *Economics of Lift Irrigation Projects in Haryana—A Case Study of the Jui Lift Irrigation Project*, Ph. D. Thesis (Unpublished), 1977

Some Suggestions

To overcome the limitations of cost-benefit analysis, certain suggestions are made for a better appraisal of projects. It is contended that projects should be appraised in combination rather than individually even though they happen to be of a different nature. The benefits should be measured both in their positive and negative aspects. Scarce factors used should be counted as negative benefits while positive benefits induced by investment in the project should make an addition to the national product. Both direct and indirect benefits should be included. In case market prices do not reflect equilibrium prices, shadow prices should be used for evaluating the effect of the project on the national economy. In underdeveloped countries the market wage for unskilled labour is often higher than the opportunity cost of labour. On the other hand, the intrinsic values of capital and foreign exchange are higher than the corresponding market prices. An accounting wage lower than the market wage and an accounting interest and an accounting foreign exchange rate higher than the market prices should be used.³⁴ The costs should include the value of scarce factors used in the project at accounting prices. The influence of an investment project on the national product should not be measured only in one year but also in time, along with its influence on employment, balance of payments, regional income distribution, etc. Weights should be given to each of these elements in order to mention the following factors for inclusion into the evaluation procedure.

1. Variation in Output Over Time. This factor is of special importance in the case of those projects which have a long fruition lag such as river valley projects. Since such projects take a long time to fructify a discounting of future costs and prices is necessary for purposes of evaluation.

2. Variation in the Range of Commodities Produced. Different techniques of production produce different qualities of product. Small scale production techniques are generally more flexible than production techniques under large scale. This factor makes project evaluation somewhat difficult.

3. Scale and Location Effects. In order to select the optimum scale of production for a particular project an estimate of the increase in demand over time is to be made. Further, there are likely to be certain diseconomies arising from over concentration of a project in a few centres, increase in transport costs and difficulties of operating large scale plants. Only some of these effects can be evaluated quantitatively.

³⁴H.C. Bas, *op. cit.*

³⁵UN, ECAFE, *Formulating Industrial Development Programmes*, 1961.

4. Non-market Effects of Production Differ from Project to Project. The use of an advanced technology may be held in training labour and management for industrialization in the long run although this fact is not reflected in the calculation of accounting prices. Other social benefits and costs which, for example, help to reduce undesirable waste, must also be taken into account.

Chapter 55

CONTROLS UNDER PLANNING

NEED FOR CONTROLS

Controls are an integral part of a planned economy. But the nature, extent and measure of controls depend upon the type of planning in the country. A centrally planned economy has full control over all economic activities, i.e., production, consumption, exchange, and distribution, internal and external trade, saving, investment, etc. On the other hand, a mixed economy has partial controls with the main purpose of allocating scarce resources in a proper way. Underdeveloped countries are mostly mixed economies where public and private sectors co-exist. Planning involves the control and regulation of the private sector for the fulfilment of the objectives of the plan. Left to market forces planning becomes a farce. For in such economies, scarcities and bottlenecks arising from structural changes retard economic development in the absence of controls. To allocate scarce resources among competing ends, the Planning Authority controls the production of goods by deciding what to produce, how to produce and how much to produce. This is tantamount to controlling investment for the purpose of utilizing it in right directions. In underdeveloped countries the Planning Authority controls the use of incomes also for the purpose of augmenting savings. This is done by controlling consumption of non-essential goods and even by forcing people to save more. The distribution of essential commodities is also controlled and regulated. Since there are adverse balance of payments and acute shortage of foreign exchange, import, export and exchange controls are introduced. Besides, the State controls particular sectors of the economy by taking them over as public enterprises if a high priority has been accorded to them in the plans. They are generally transport, power, basic and heavy industries, basic raw materials, etc.

Type of Controls

Controls may be direct or indirect. *Direct* controls, better known as *physical* controls, effect particular producers' and consumers' choices in

¹Based on an extension lecture delivered to Post-Graduate Economics Faculty of Government College., Hoshiarpur in January 1972.

the economy. Such controls are in the form of licensing, rationing, price controls, export duties, import-export and exchange controls, quotas, authorisation, rationing of foreign exchange, anti-hoarding control, monopoly control etc. *Indirect controls*, on the other hand, are known as *general controls* which affect prices and hence the incomes and transactions within the economy. In fact, they affect the overall aggregate demand of the economy and include fiscal and monetary measures. Thus general controls refer to the taxation, expenditure and borrowing measures of the State and to the monetary policy of the central bank in the form of variations in the bank rate, open market operations and reserve requirements, selective credit controls, etc. We discuss below the nature and problems of physical controls in the light of Indian conditions, general controls in the form of fiscal and monetary measures having already been discussed in two earlier chapters.

Aims of Physical Controls

The aim of physical controls is to ensure proper allocation of scarce resources for the purpose of price stabilisation. An underdeveloped economy is a scarce economy where food, raw materials, consumer goods, capital equipment, basic facilities, foreign exchange, etc. are all in short supply. When it launches a development plan, the aggregate demand for the various resources increases and leads to a rise in the price level. The rise in prices becomes inflationary when bottlenecks and shortages increase as incomes and investment rise more with development. In such a situation, fiscal and monetary measures alone are ineffective in controlling aggregate demand and prices. Thus the need arises for adopting physical controls which tend to affect the strategic points of the economy. Unlike general controls which affect the entire economy, physical controls are discriminatory in nature. They are, therefore, more effective in overcoming bottlenecks and shortages arising in the course of development planning.

1. Control Over Consumption. Consumption may be regulated and controlled in two ways: (i) by limiting the production of consumer goods directly through allocation of raw materials, labour and output quotas; and (ii) by limiting the physical demand for goods through price control and rationing.

Price control and rationing are the legacy of the Second World War when they were resorted to for directing the supplies of essential consumer goods for war purposes. Price controls are less drastic and more comprehensive than rationing and therefore are more useful in distributing the means of production and the supplies of available goods equitably among the people of underdeveloped countries. But in a

competitive market for price controls to become successful, rationing is essential. Because prices fixed are at a low level and supplies of commodities at controlled prices are also less than demand. Thus unless there is rationing, price controls lead to queues, unequal distribution and black marketing, and thus defeat the very purpose for which they are resorted to. In India where agricultural production may fall below the targets laid down in the plan due to bad monsoons, drought, etc., food control and rationing are a must. Since a major part of our economy is dependent upon agriculture, price controls over essential consumer goods are also necessary. For instance, shortages in output of cotton, oilseeds, jute and sugarcane are fully reflected in the increased price of textile products, edible oils, jute, and sugar. Except jute products, all the other products are essential goods. In India, the foodgrain prices are controlled at three levels—producer, wholesaler and retailer. There is statutory rationing in big cities like Bombay, Calcutta, Madras and Delhi; at other towns in the country foodgrains and sugar are distributed in fixed quantities and at controlled prices through fair price shops. Prices and supplies of other essential commodities are controlled and regulated through consumers' cooperatives, super bazars, etc. Such commodities are cloth, soaps, vegetable ghee, kerosene oil, baby foods, tyres, tubes, etc.

2. Controls Over Investments. In an underdeveloped country, there are shortages of investible funds of right types for investment. Industrial raw materials, food, skilled personnel and foreign exchange are all scarce. Physical controls help in rational allocation and utilisation of these strategic resources. The usual methods of control over investment are fixation of quotas, issue of licences and authorisation on the basis of priorities. Some direct control of investment is inevitable in such economies due to market imperfections. If private investment is directed toward residential buildings, building permits can be issued. Similarly to keep factories out of residential areas or to prevent excessive concentration of factories in certain towns for implementing a policy of decentralisation, issuing of building licences on a priority basis are essential. In the case of certain scarce materials produced indigenously like cement, their supplies can be regulated by anti-hoarding controls or quantitative inventory. In those fields of investment where imported machinery, components and raw materials are required, physical controls in the form of import quotas, duties and rationing of foreign exchange are exercised. Private investible funds flowing to joint stock companies may be controlled by restricting capital issues and securities. Thus control over investment by concentrating at strategic points can result in a better use of available resources.

3. Control Over Production. Control over production is closely linked

to control over investment. In fact, there is little difference between the two. For instance, it may be necessary to control investment in those industries that tend to displace handicraft workers without affecting the material output substantially. Under development planning, production of certain essential commodities may be accorded a higher priority than non-essential consumer goods. Similarly, higher targets may be laid down for the production of basic raw materials and components like coal, iron ore, iron and steel, chemicals, small tools, cement, etc. They necessitate not only control over investment but also over production in the form of fixation of quotas, authorisations, and licences. Prices of indigenous and imported raw materials and components may be fixed and their quantities allocated according to the requirements of the planned economy.

In India control over investment and production go together. Large scale industry is subject to some specific price and allocation controls and to general capital issue and licensing controls. This has become necessary for the balanced development of different sectors of the economy.

In India since independence controlled commodities have been sugar, cotton textiles, steel, coal, aluminium, chemicals, cement, paper, paper board, etc. During the last few years in pursuance of the policy of rationalising controls over prices and distribution of these intermediate and manufactured articles, gradual decontrol has been introduced.

There exists in India a comprehensive system of controls over investment and production to fulfil the objectives and targets laid down in the Plans with regard to the industrial sector. The Industries (Development and Regulation) Act 1951 enables the State to implement its policies for the planned development and regulation of industries. Under this act, any industrialist who wants to establish a new undertaking or to expand substantially an existing concern or to manufacture a new product is required to take a licence. But it is not that all industries are issued licences. In the government nomenclature there is a *banned list* which is of course reviewed every year. There is another category of industries known as the *merit list* where licences are given on merits. But the most important category is that of *key industries* which are essential for the fulfilment of Plan targets and where the creation of additional capacity is considered essential. Priority is given in issuing licences to such industries as also in permitting them to raise capital internally or externally to import raw materials, equipment, etc. It is not that licensing is a permanent feature and that all industries must be licensed. Rather, for increasing the capacity of certain priority industries not needing foreign raw materials and components any more, delicensing

employing less than 50 workers and using no power or employing 100 workers and using power and those having fixed assets not exceeding Rs. 25 lakhs are exempted from the provisions of this Act, provided they do not come in the categories enumerated above. A licence issued to an industrial concern includes besides the name of the concern and articles to be manufactured, the annual output of the undertaking, its location and the capital issued.

Another feature of physical controls in India is that production in the basic and strategic sectors, included in Schedule A of the Industrial Policy of 1956 is under the complete control of the State. Such industries are arms and ammunitions, atomic energy, heavy plant and machinery, heavy electrical plant, mineral oil, aircraft, railway transport, telephones and telephone cables, etc.

4. Import Controls. Import controls in the context of an underdeveloped country aim at shifting imports from non-essential consumer goods to capital goods, raw materials and components for augmenting the rate of industrial growth. Development planning requires that imports of certain non-essential and luxury goods are prohibited by imposing heavy import duties, while those of essential consumer goods like food, industrial raw materials, components and capital goods are regulated by import licensing and import quotas. Thus import controls in an underdeveloped country have two main features. First, prohibition of the import of certain non-essential commodities. Second, general or individual licensing which is based on one or more of the following criteria: (a) country of origin; (b) degree of essentiality; (c) quotas and monetary ceilings for individual imports; (d) special commitments or obligations; and (e) international allocations.

India follows both the prohibitive and licensing policies. The licensing policy in India is primarily based on essentiality, special commitments and international allocations. Before Devaluation, foreign aid was mainly tied to specific projects. But since the middle of 1966-67 the emphasis has shifted to non-project form of aid. From time to time import controls have been liberalised to meet the input requirements of certain priority industries in full and to help maintain the price level particularly in respect of mass consumption goods. Further, the scope of the Open General Licence (OGL) has also been widened by placing a number of essential commodities like leather machinery, garment making machinery, a large number of drugs, medicines, chemicals, electronic items, iron and steel items, and scientific and technical books under OGL. The system of automatic licensing has also been introduced whereby licences are issued on the basis of actual consumption of imported raw materials without reference to the value of such licences in the previous year. But certain items categorised as 'absolutely non-

'permissible' are not allowed to be imported in view of their indigenous availability. Thus the main aim of the import-control policy in India has been to achieve faster economic development by providing essential imported inputs for enlarging the production base for exports.

5. Export Controls. Control over the export of various products in underdeveloped countries depends upon internal supply conditions, variations in the demand for products internally and internationally and the need for conserving stocks of essential raw materials. However, the principal objectives of exchange controls in such countries are: (a) to earn large foreign exchange from exports; (b) to conserve sufficient quantities of products for domestic consumption; (c) to enforce standards of quality and grading; (d) to fulfil commitments under international allocations; and (e) to fulfil export commitments in accordance with trade agreements; and *lastly*: to increase exports to hard currency areas.

Control over exports in India aim at achieving all these objectives. Up to 1957-58 Indian exports were almost stagnant. In that year export duties were adjusted downward to earn large foreign exchange. Arrangements were also made to introduce quality control and grading. Exports again received a setback in 1965-66. After the devaluation of the Rupee in June 1966, export duties were levied on a number of traditional export items which faced either inelastic foreign demand or lack of elasticity of supply or both. The main purpose behind the levy of export duties was to avoid loss of foreign exchange through a fall in the foreign prices. However, reductions, rationalisations or abolition of export duties are made from time to time in the light of international demand conditions and the competitive position of Indian export products in the world market. In India, two-thirds of exports are subject to controls. Keeping in view the trend in domestic availability of commodities and prices, some items are banned and others are regulated for export purposes every year. Many of the items are also placed under the OGL.

6. Exchange Control. Exchange control is a method by which efforts are made to influence the balance of payments directly. Underdeveloped countries suffer from balance of payments difficulties. Their export earnings are low as they mainly export raw materials and other cheap products which are subject to international price fluctuations and hence variations in demand. On the other hand, they import heavy capital equipment, machinery and a number of manufactured articles so that they are required to make large payments to foreign countries. This necessitates the imposition of direct controls on payments to other countries. In its most comprehensive form, exchange control requires exporters to deposit all their foreign exchange with the exchange control

authorities in exchange for domestic currency. In a system of exchange control foreign exchange is not fully convertible. Importers and other persons needing foreign currencies are not given freely. They are required to satisfy certain conditions laid down by the authorities to obtain foreign exchange for making payments to foreigners. Even restrictions are placed on foreign travels and education. Exchange controls are used also to discriminate against imports from certain countries. It leads to the rationing of a scarce currency to reduce imports from that country while people are left free to buy from those countries whose currencies are plentiful. Another form of exchange controls is the system of multiple exchange rates. The exchange control authorities may prescribe two or more exchange rates for different kinds of international transactions. Normal exchange rate may be used for essential imports and penalty exchange rate for non-essential imports.

In India the system of exchange control exists in its exhaustive form in order to control exports and imports in the context of a developing economy. Exchange controls were introduced in India during the Second World War to conserve foreign exchange. An Exchange Control Department was opened by the Reserve Bank of India in 1939 for this purpose. Thus the Reserve Bank of India is the exchange control authority in the country. All export earnings are required to be deposited with the Reserve Bank of India or its authorised dealers, and they are exchanged for the Indian Rupee at a fixed rate. All importers are required to seek permission of the authorities for importing commodities, then only foreign exchange is released by the Reserve Bank. Similarly, any person desirous of going abroad for purposes of business, higher education, etc., is released only a limited amount of foreign exchange for a specified period of time.

Limitations of Physical Controls

Physical controls, as discussed above, are not so successful in matching the demand and supplies of commodities and services in a country like India. They have their difficulties which prevent them from controlling inflationary and balance of payments pressures and in allocating goods and services equitably. They, therefore, bring in a certain amount of black marketing corruption.

Control over consumption in the form of price controls and rationing is successful in countries where administration is efficient. Controls require the fixation of prices of various goods not only at different stages of production but also at different places. Controls cannot be rigid. They have to be reviewed and relaxed when the supply situation improves. Controls also necessitate complete co-ordination between the Centre and the States. The failure on the part of the Government of

India after Independence to follow such measures due to an inefficient administrative machinery led to corruption and black marketing. However, in recent years the Government have learnt much from the past experiences and have tried to rationalize the system of controls. But still certain snags are visible in the policy of price controls.

In India controls exist in the case of essential consumer goods like wheat, rice, vegetable, ghee, sugar, etc. When prices of controlled commodities are fixed upward, prices of uncontrolled and related goods also rise but more in proportion to the rise in the former. No efforts are made to control the prices of the latter goods like pulses, oil, etc. This results in a large unsold surplus of the controlled articles and a shortage of the uncontrolled articles. Thus partial controls have been ineffective in controlling inflationary pressures in India. They, therefore, need to be supplemented by fiscal and monetary measures.

Certain problems also arise in the case of those commodities which are rationed along with controls. To avoid black marketing and corruption, the quantity of ration allotted should be high enough to meet the minimum requirements of a family. In India the rationed articles of various qualities are sold to consumers in fixed quantities according to the number of family members. This results in a large unsold surplus of the superior quality and a shortage of the inferior quality in predominantly labour areas in the case of wheat and rice. Whereas the opposite happens in areas resided by the white collar classes. The Government's policy of selling the same commodity in the open market, as also through fair price shops at controlled prices, creates difficulties when consumers do not draw full ration allotted to them. It encourages ration shops to sell surplus quantities in the black market at higher prices. Moreover, the supply of essential articles at controlled prices and in fixed quantities have tended to increase the demand for uncontrolled semi-luxury and luxury goods with the increase in the savings of the people. This has resulted in diverting resources from essential to non-essential articles of consumption.

1. In the Field of Production. India has the most comprehensive system of physical controls in the form of licences, quotas, authorisation, etc. There is such a maze of regulations and elaborate procedures that there is inordinate delay in taking decisions on the part of government departments. For instance, to start a firm, a licence is required which is not an easy affair. The location of the factory, the product to be manufactured, and the amount of capital to be raised must be got approved from the respective government departments. The policy of investment controls has led to corruption and arbitrary decision. It has not helped in removing regional imbalances preventing

concentration and allocating resources equitably. Thus controls have tended to retard progress by eliminating healthy competition and preventing the operation of the price factor. Moreover, these controls have tended to hurt the small businessmen the most because they cannot meet the requirements of a rigid system of licensing. The Planning Commission admits in this connection that "the existing industrial structure had led generally to a high level of costs and that the present system does not appear to have prevented concentration. In some cases industry has been inappropriately sited and some desirable adjustments in regional locations have not taken place. . . . Sheltered conditions created, in part, by the operation of existing controls appear to have reduced cost consciousness among entrepreneurs." It, therefore, proposes a relaxation of existing controls so as to encourage fully responsible decision making on the part of entrepreneurs and an element of competitiveness in the economy which would keep up cost consciousness.² Professor W.A. Lewis observes that the system of licensing was thought to be an inevitable instrument of planned development for a few years after the Second World War, but this was only a passing phase. By the middle of 1950s all the leading social democratic parties of the world had come to realize that licensing was an inefficient and corrupt way of allocating resources and had dropped it from their programmes. Today even in the USSR powerful authoritative voice, are urging greater reliance on the market and less use of administrative directions. He, therefore, opines that, "if licensing is inefficient and corrupt in advanced countries, with first class administrators, it is even more harmful in less developed countries. In most poor countries licensing means inordinate delays and inexplicable decisions. If licensing cannot be administered promptly and efficiently, the country is better off without it."³

2. In the Field of Imports. The policy of import controls through import quotas and import licensing also widens the scope for delay, corruption and arbitrary decisions. Often priority industries are not able to import intermediate inputs in time, due to the delay in sanctioning quotas and licences. In certain cases, inadequate quotas are fixed in relation to demand.

3. In the Field of Export. The policy of export controls has been a success in achieving its main objectives of earning larger foreign exchange and thus minimising the balance of payments deficit.

4. In the Field of Exchange Controls. Exchange controls are very rigid in India. They leave no freedom to private enterprise to buy plant,

²GOI, *Fourth Five-Year Plan*, 1969-74.

³Development Planning, 1966

machinery, raw materials from the country of its choice. They can be only imported from that country whose currency is available with the Reserve Bank of India. The exchange control policy of India has created a black market not only of dollar but also of sterling. Further it has tended to breed corruption. Recent exchange control relaxations have been too small to warrant any improvement in the situation. We may quote Professor Lewis in this connection: "Some countries have had exchange control for so long that they have persuaded themselves that it is an inevitable accompaniment of economic development. This is not so; most countries have developed without exchange control; it is rather a sign of failure to allocate sufficient resources for the maintenance of the foreign balance, whether by paying more attention to exports or by investing more in import substitution. Countries which make adequate plans for exportation and import substitution do not need exchange control (apart from restrictions on exporting capital)."¹⁴

Conclusion. Despite these weaknesses, direct controls have helped in allocating scarce resources to a considerable extent in India. The main problem has been not one of their success but of their extension and rigid application to almost every sphere of economic activity. The Indian economy is said to suffer from the crisis of controls. No doubt, controls are essential in a planned economy but in India they have been carried so far as to hinder planned progress. The success of the policy of physical controls for economic development depends upon a judicious combination of the various control measures along with monetary and fiscal measures. As soon as they fulfil the task of allocating scarce resources and removing scarcities physical controls should be relaxed.

INPUT-OUTPUT ANALYSIS

MEANING

Input-output is a novel technique invented by Professor Wassily W. Leontief in 1951. It is used to analyse inter-industry relationship in order to understand the inter-dependencies and complexities of the economy and thus the conditions for maintaining equilibrium between supply and demand. It is also known as "inter-industry analysis."

Before analysing the input-output method, let us understand the meaning of the terms, "input" and "output". According to Professor J.R. Hicks, an input is "something which is bought for the enterprise" while an output is "something which is sold by it." An input is obtained but an output is produced. Thus input represents the expenditure of the firm, and output its receipts. The sum of the money values of inputs is the total cost of a firm and the sum of the money values of the output is its total revenue.

The input-output analysis tells us that there are industrial inter-relationships and inter-dependencies in the economic system as a whole. The inputs of one industry are the outputs of another industry and vice versa, so that ultimately their mutual relationships lead to equilibrium between supply and demand in the economy as a whole. Coal is an input for steel industry and steel is an input for coal industry, though both are the outputs of their respective industries. A major part of economic activity consists in producing intermediate goods (inputs) for further use in producing final goods (outputs). There are flows of goods in "whirlpools and cross currents" between different industries. The supply side consists of large inter-industry flows of intermediate products and the demand side of the final goods. In essence, the input-output analysis implies that in equilibrium, the money value of aggregate output of the whole economy must equal the sum of the money values of inter-industry inputs and the sum of the money values of inter-industry outputs.

Main Features. The input-output analysis is the finest variant of general equilibrium. As such, it has three main elements: *First*, the input-output analysis concentrates on an economy which is in equilibrium. It is not applicable to partial equilibrium analysis. *Secondly*, it

does not concern itself with the demand analysis. It deals exclusively with technical problems of production. Lastly, it is based on empirical investigation.

Assumptions. This analysis is based on the following assumptions:

(i) The whole economy is divided into two sectors—"inter-industry sector" and "final demand sector," both being capable of sub-sectoral division.

(ii) The total output of any inter-industry sector is generally capable of being used as inputs by other-inter-industry sectors, by itself and by final demand sectors.

(iii) No two products are produced jointly. Each industry produces only one homogeneous product.

(iv) Prices, consumer demands and factor supplies are given

(v) There are constant returns to scale

(vi) There are no external economies and diseconomies of production.

(vii) The combinations of inputs are employed in rigidly fixed proportions. The inputs remain in constant proportion to the level of output. It implies that there is no substitution between different materials and no technological progress. There are fixed input coefficients of production.

The input-output analysis consists of two parts: the construction of the input-output table and the use of input-output model.

THE USE OF INPUT-OUTPUT MODEL IN PLANNING

The input-output table relates to the economy as a whole in a particular year. It shows the values of the flows of goods and services between different productive sectors especially inter-industry flows.

For understanding, a three-sector economy is taken in which there are two inter-industry sectors, agriculture and industry, and one final demand sector.

Table 56.1 provides a simplified picture of such economy.

In this table, the total output of the industrial, agricultural and household sectors is set in rows (to be read horizontally) and has been divided into the agricultural, industrial and final demand sectors. The inputs of these sectors are set in columns. The first row total shows that altogether the agricultural output is valued at Rs 300 crores per year. Of this total, Rs 100 crores go directly to final consumption, that is, household and government, as shown in the third column of the first row. The remaining output from agriculture goes as inputs; 50 to itself and 150 to industry. Similarly the second row shows the distribution of total output of the industrial sector valued at P-

TABLE 56.1. INPUT-OUTPUT TABLE

(in Value Terms) (Rs crores)

SELLING SECTORS	PURCHASING SECTORS			Total Output or Total Revenue
	1 Inputs to Agriculture	2 Inputs to Industry	3 Final Demand	
Sectors				
Agriculture	50	150	100	300
Industry	100	250	150	500
Value added*	150	100	0	250
Total Input or Total cost	300	500	250	1050

* Value added refers to payments to the factors of production.

Columns 1, 2 and 3 show that 100 units of manufactured goods go as inputs to agriculture, 250 to industry itself and 150 for final consumption to the household sector.

Let us take the columns (to be read downwards). The first column describes the input or cost structure of agricultural industry. Agricultural output valued at Rs 300 crores is produced with the use of agricultural goods worth Rs 50, manufactured goods worth Rs 100 and labour or/and management services valued at Rs 150. To put it differently, it costs Rs 300 crores to get a revenue of Rs 300 crores from the agricultural sector. Similarly, the second column explains the input structure of the industrial sector (i.e., $150+250+100=500$). Thus "a column gives one point on the production function of the corresponding industry." The 'final demand' column shows what is available for consumption and government expenditure. The third row corresponding to this column has been shown as zero. This means that the household sector is simply a spending (consuming) sector that does not sell anything to itself. In other words, labour is not directly consumed.

Feasibility and Consistency of the Plan

An economy behaves and assumes a certain pattern of flows of resources in two ways. They are: (a) the internal consistency or balance of each sector of the economy, and (b) the external stability of each sector or inter-sectoral relationships. Leontief calls them the "fundamental relationship of balance and structure." When expressed mathematically they are known as the "balance equations" and the

"structural equations."

If the total output of say X_i of the i th industry be divided into various number of industries, 1, 2, 3, n , then we have the balance equation:

$$X_i = x_{i1} + x_{i2} + x_{i3} + \dots + x_{in} + D_i \quad \dots \quad (1)$$

and if the amount say Y_i absorbed by the "outside sector" is also taken into consideration, then the balance equation of the i th industry becomes

$$X_i = x_{i1} + x_{i2} + x_{i3} + \dots + x_{in} + D_i + Y_i$$

or

$$\sum_{j=1}^n x_{ij} + Y_i = X_i \quad \dots \quad (2)$$

It is to be noted that Y_i stands for the sum of the flows of the products of the i th industry, to consumption, investment and exports, net of imports, etc. It is also called the "final bill of goods" which it is the function of the output to fill. The balance equation shows the conditions of equilibrium between demand and supply. It shows the flows of outputs and inputs to and from one industry to other industries and vice versa.

The system of balance equations in the analysis presents the conditions of internal consistency of the plan. The plan would not be feasible without them because if these equations are not satisfied, there might be excess of some goods and deficiency of others.

Since x_{iz} stands for the amount absorbed by industry 2 of the i th industry it follows that x_{ij} stands for the amount absorbed by the j th industry of i th industry. The "technical coefficient" or "input coefficient" of the i th industry is denoted by.

$$a_{ij} = \frac{x_{ij}}{X_j} \quad \dots \quad (3)$$

where x_{ij} is the flow from industry i to industry j . X_j is the total output of industry j and a_{ij} , as already noted above, is a constant, called "technical coefficient" or "flow coefficient" in the i th industry. The technical coefficient shows the number of units of one industry's output that are required to produce one unit of another industry's output. Equation (3) is called a "structural equation." The structural equation tells us that the output of one industry is absorbed by all industries so that the flow-structure of the entire economy is revealed. A number of structural equations give a summary description of the economy's existing technological conditions.

The matrix of technical coefficient of production for any input-output table with n sectors would consist of $n \times n$ elements. There being two sectors in our example, 2×2 technical coefficients of the matrix would

*For a Consistency Plan Model, refer to the Fourth Plan Model in Ch. 26.

be arranged symbolically as follows:

TABLE 56.2 TECHNOLOGY MATRIX A

	<i>Agriculture</i>	<i>Industry</i>
<i>Agriculture</i>	a_{11}	a_{12}
<i>Industry</i>	a_{21}	a_{22}

Using equation (3) to calculate the a_{ij} for our example of the two-sector input-output Table 56.1, we get the following technology matrix.

TABLE 56.3. TECHNOLOGY COEFFICIENT MATRIX A

	<i>Agriculture</i>	<i>Industry</i>
<i>Agriculture</i>	$\frac{50}{300} = .17$	$\frac{150}{500} = .30$
<i>Industry</i>	$\frac{100}{300} = .33$	$\frac{250}{500} = .50$

These input coefficients have been arrived at by dividing each item in the first column of Table 56.1 by first row total, and each item in the second column by the second row, and so on. Each column of the technological matrix reveals how much agricultural and industrial sectors require from each other to produce a rupee's worth of output. The first column shows that a rupee's worth of agricultural output requires inputs worth 33 paise from industries and worth 17 paise from agriculture itself.

The Leontief Solution*

The table can be utilised to measure the direct and indirect effects on the entire economy of any sectoral change in total output of final demand.

Again using equation (3)

$$a_{ij} = \frac{x_{ij}}{X_i}$$

Cross multiplying. $x_{ij} = a_{ij} \cdot X_j$

By substituting the value of x_{ij} into equation (2) and transposing terms, we obtain the basic input-output system of equations

* Ordinary students may omit this portion.

$$X_i - \sum_{j=1}^n a_{ij} x_j = Y_i$$

In terms of our two-sector economy, there would be two linear equations that could be written symbolically as follows:

$$\begin{aligned} X_1 - a_{11}x_1 - a_{12}x_2 &= Y_1 \\ X_2 - a_{21}x_1 - a_{22}x_2 &= Y_2 \end{aligned}$$

The above symbolic relationship can be shown in matrix form:

$$\begin{aligned} X - [A]X &= Y \\ X(I-A) &= Y \end{aligned}$$

where matrix $(I-A)$ is known as the Leontief Matrix

$$\begin{aligned} (I-A)^{-1}(I-A)X &= (I-A)^{-1}Y \\ X &= (I-A)^{-1}Y \quad [(I-A)^{-1}(I-A)] \end{aligned}$$

and I , the identity matrix = $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

$$\text{Hence } \begin{bmatrix} X_1 \\ X_2 \end{bmatrix} = \left\{ \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} A \end{bmatrix} \right\}^{-1} \begin{bmatrix} Y_1 \\ Y_2 \end{bmatrix}$$

Numerical Solution. Our technology matrix as per Table 56.3 is

$$A = \begin{bmatrix} .1 & .3 \\ .3 & .5 \end{bmatrix} \text{ and } Y = \begin{bmatrix} 100 \\ 150 \end{bmatrix}$$

$$(I-A) = \begin{bmatrix} .9 & -.3 \\ .3 & .5 \end{bmatrix}$$

$$\text{The value of inverse} = \frac{\text{Adjoint}}{\text{Determinant}} = \frac{\text{Adj}}{|A|}$$

$$[A_{ij}] = \begin{bmatrix} .5 & .3 \\ .3 & .9 \end{bmatrix}$$

$$\text{By transposing, } A_{ij} = \begin{bmatrix} .5 & .3 \\ .3 & .9 \end{bmatrix}$$

$$\begin{aligned} \text{The value of determinant} &= .9(.5) - (-.3)(-.3) \\ &= .45 - .09 = .36 \end{aligned}$$

$$\text{Hence } \begin{bmatrix} X_1 \\ X_2 \end{bmatrix} = \frac{1}{.36} \begin{bmatrix} .5 & .3 \\ .3 & .9 \end{bmatrix} \begin{bmatrix} 100 \\ 150 \end{bmatrix}$$

The total output of agriculture sector (x_1)

$$= \frac{.5 \times 100 + .3 \times 150}{.36} = 264$$

The total output of industrial sector (x_2)

$$= \frac{.3 \times 100 + .9 \times 150}{.36} = 458.$$

THE DYNAMIC INPUT-OUTPUT MODEL

So far we have studied an *open static* model. "The model becomes Dynamic when it is closed by the linking of the investment part of the final bill of goods to output."¹ The dynamic input-output model extends the concept of inter-sectoral balancing at a given point of time to that of inter-sectoral balancing over time. This necessarily involves the concept of durable capital.²

The Leontief dynamic input-output model is a generalization of the static model and is based on the same assumptions: In a dynamic model, the output of a given period is supposed to go into stocks, i.e., capital goods, and the stocks, in turn, are distributed among industries. The balance equation is:

$$X_i(t) = x_{i1}(t) + x_{i2}(t) + x_{i3}(t) + \dots + x_{in}(t) + (S'_{i1} + S'_{i2} + S'_{i3} + \dots + S'_{in}) \\ + D_i(t) + Y_i(t) \quad \dots (4)$$

Here $X_i(t)$ represents the total flow of output of i th industry in period t , which is used for three purposes: (i) for production in the economy's n industries $x_{i1}(t)$, $x_{i2}(t)$, etc., in that period; (ii) as net addition to the stock of capital goods in n industries i.e., S'_i , which can also be written as $\Delta S_i(t) = S_i(t+1) - S_i(t)$, where $S_i(t)$ indicates the accumulated stock of capital in the current period (t), and $S_i(t+1)$ is next year's stock; and (iii) as consumption demand for the next period $D_i(t+1)$. If we ignore depreciation and wear-tear, then $S_i(t+1) - S_i(t)$ is the net addition to capital stock out of current production. Equation (4) can, therefore, be written as:

$$X_i(t) = x_{i1} + x_{i2} + x_{i3} + \dots + x_{in} + S_i(t+1) - S_i(t) + D_i(t) + Y_i(t)$$

$Y_i(t)$ stands for the amount absorbed by the outside sector in period t .

Just as the technical co-efficient was derived in the case of the static model the capital co-efficient can be found out in a similar manner. Capital co-efficient of the i th product used by the j th industry is denoted by

¹J. Sandee, *A Demonstration Planning Model for India*.

²See K. Bhattacharya, *Input-Output Analysis*.

$$bij = \frac{Sij}{Xj}$$

Cross multiplying we have $Sij = bij \cdot v_j$. . . (5)

where Sij represents the amount of capital stock of the i th product used by the j th industry. Xj is total output of industry j and bij is a constant called capital co-efficient or stock co-efficient. Equation (5) is known as the structural equation in a dynamic model.

If the bij co-efficient is zero, it means that no stock is required by an industry and the dynamic model becomes a static model. Moreover, bij can neither be negative nor infinite. If the capital co-efficient is negative, the input is in fact an output of an industry.

Limitations of Input-Output Analysis

The input-output analysis has its shortcomings. Its framework rests on Leontief's basic assumption of constancy of input co-efficient of production which was split up above as constant returns to scale and technique of production. The assumption of constant returns to scale holds good in a stationary economy, while that of constant technique of production in stationary technology. These assumptions sacrifice reality. They do not treat the inter-industry analysis dynamically even in the so called "dynamic model". It tells us nothing as to how technical co-efficients would change with changed conditions. Again, some industries may have identical capital structures, some may have heavy capital requirements while others may use no capital. Such variations in the use of techniques of production make the assumption of constant co-efficients of production unrealistic.

Again, this assumption of fixed co-efficients of production ignores the possibility of factor substitution. There is always the possibility of some substitutions even in a short period, while substitution possibilities are likely to be relatively greater over a longer period.

The assumption of linear equations, which relates outputs of one industry to inputs of others, appears to be unrealistic. Since factors are mostly indivisible, increases in outputs do not always require proportionate increases in inputs.

Moreover, the rigidity of the input-output model cannot reflect such phenomena as bottlenecks, increasing costs, etc.

The input-output model is severely simplified and restricted as it lays exclusive emphasis on the production side of the economy. It does not tell us why the inputs and outputs are of a particular pattern in the economy.

Another difficulty arises in the case of "final demand" or "bill of goods." In this model, the purchases by the government and consumers

are taken as given and treated as a specific bill of goods. Final demand is regarded as an independent variable. It might, therefore, fail to utilize all the factors proportionately or need more than their available supply. Assuming constancy of co-efficiency of production, the analysis is not in a position to solve this difficulty.

There is no mechanism for price adjustment in the input-output analysis which makes it unrealistic. "The analysis of cost-price relations proceeds on the assumption that each industrial sector adjusts the price of its output by just enough to cover the change in the case of its primary and intermediate output." The dynamic input-output analysis involves certain conceptual difficulties. *First*, the use of capital in production necessarily leads to stream of output at different points of time being jointly produced. But the input-output analysis rules out joint production. *Second*, it cannot be taken, for investment and output will necessarily be non-negative.³

The input-output model thrives on equations that cannot be easily arrived at. The first thing is to ascertain the pattern of equations, then to find out the necessary voluminous data. Equations pre-suppose the knowledge of higher mathematics and correct data are not so easy to ascertain. This makes the input-output model abstract and difficult.

In the above analysis, we have presented a highly simplified model of input-output analysis. To be useful for planning purposes, the input-output table should be divided into thirty or more industries or sectors. In many underdeveloped countries reliable data needed to construct a large input-output table are not easily available. In smaller countries only a few industries or sectors exist and the input-output table is of little use. A number of cells in it are shown as zero. Moreover, in case of the subsistence agricultural sector, labour is the only input, and output sold in the market sector is insignificant, while commercial crops are sold to the consumption sector. The input-output table is useless in such economies. Thus for the input-output analysis to be useful for an underdeveloped country, it is essential that it must be a large economy where the number of industries or sectors is quite large for substantial inter-industry transactions to take place, and for reliable statistical information to be available. But all these conditions are not met in the majority of underdeveloped countries which limit the use of input-output analysis as a technique in development planning.

Use of Input-Output Technique in Planning

The knowledge of both the fundamental relationships of "flow coefficients" of the static model and of "capital coefficients" of the

³Ibid., p. 76.

dynamic model is required for the development plans. The input-output table tells us about the inter-relationships between various sectors and the structural relationships within each sector. On the basis of this information, the planning authority can determine the effect of a change in one sector on all other sectors of the economy and thus plan accordingly.

With the help of the static analysis "flow coefficients" of each industry can be calculated and known during a given period of time. But in an economy fast moving towards economic development, the flow structure of the economy does not remain stable. Again, a static model takes the capital structure of the economy as given. In fact, the capital requirements of the economy change with economic development. It is only "when we properly harmonize the capital structure with the flow structure that we get a comprehensive input-output system which is very useful for dynamic analysis in connection with planning. Given the basic conditions and also time period (say five years) one can calculate the flow coefficients and the capital coefficients of an economy. In addition to all this if the time shape of the final demand is also known, one could find out definitely (by solving a system of linear non-homogenous differential equations) what should be the consistent and optimum levels of output of various industries after five years."⁴

The input-output technique with its basic assumption of constant "technical coefficient" is of much help to a planning authority in an underdeveloped country. A linear homogeneous input-output model fits in an underdeveloped economy where reliable statistical data about technical coefficients are not easily available. By assuming constant "flow" and "capital coefficients" the need for collecting and computing vast statistical data is greatly reduced. Since inputs are considered proportional to outputs, this technique is certainly of immense help in determining the amount of inter-industry flows of goods and services in an underdeveloped country.

"From the planning point of view, the dynamic input-output model has much appeal; it helps in identifying a moving equilibrium of outputs. Investment is specified of a disaggregated level in terms of specific investment goods and is treated endogenously. The planner is helped to see more clearly the implications of raising the level of investment in a particular sector, given the requirements of inter-sectoral balancing."⁵

The input-output analysis is also used for national economic planning. The static and dynamic models can be applied in preparing the 'Plan-frame' in underdeveloped economies. The input-output model

⁴A. Ghosh, *New Horizons in Planning*, p. 16

⁵Ajit K. Dasgupta, *op cit.*, p. 75.

provides the necessary information about the structural coefficients of the various sectors of the economy during a period of time or at a point of time which can be utilized for the optimum allocation of the economy's resources towards a desired end. The dynamic model is particularly helpful in a developing economy which can estimate through the input-output table the impact of different growth rates of the various sectors of the economy and thus choose the most desired one.

A United Nations study⁶ lists the following uses of input-output models in *development programming*:

"(i) They provide for individual branches of the economy's estimates of production and import levels that are consistent with each other and with the estimates of final demand.

"(ii) The solution to the model aids in the allocation of the investment required to achieve the production levels in the programme and it provides a more accurate test of the adequacy of available investment resources.

"(iii) The requirements for skilled labour can be evaluated in the same way.

"(iv) The analysis of import requirements and substitution possibilities is facilitated by the knowledge of the use of domestic and imported materials in different branches of the economy.

"(v) In addition to direct requirements of capital, labour and imports, the indirect requirements in other sectors of the economy can also be estimated.

"(vi) Regional input-output models can also be constructed for planning purposes to explore the implications of development programmes for the particular region concerned, as well as for the economy as a whole."

It concludes that these models "are primarily applicable in economies that have achieved a certain degree of industrial development and hence have a substantial volume of inter-industry transactions."

⁶Use of Model in programming, UN Department of Economics & Social Affairs, *Industrialization and Productivity*.

Secondly there should be alternative production processes for achieving the objective. The concept of *process* or *activity* is the most important in linear programming. A process is a 'specific method of performing an economic task'. It is 'some physical operation, e.g., consuming something, storing something, selling something, throwing something away, as well as manufacturing something in a particular manner. The LP technique enables the planning authority to choose the most efficient and economical process in attaining the objective.

Thirdly, there must be certain *constraints* or *restraints* of the problem. They are the limitations or restrictions pertaining to certain conditions of the problem, as to what cannot be done and what has to be done. They are also known as *inequalities*. They may be limitations of resources such as land, labour or capital.

Fourthly, there are the *choice variables*, the various production processes or activities so as to maximise or minimise the objective function and to satisfy all the restraints.

Lastly, there are the *feasible* and *optimal* solutions. Given the income of the consumer and the prices of goods, feasible solutions are all possible combinations of the goods he can feasibly buy. Feasible solutions of two goods for the consumer are all combinations that lie on and to the left of the budget line. Whereas, on an isocost line, they are the combinations that lie on and to the right of it. We may put it differently that a feasible solution is one which satisfies all the restraints. The *optimal solution* is the best of the feasible solutions. If a feasible solution maximises or minimises the objective function, it is an optimal solution. The best available procedure for finding out the optimal solution out of the possible feasible solutions is the simplex method. It is a highly mathematical and technical method involved in linear programming. However, the main aim of linear programming is to find out optimal solutions and study their characteristics.

Assumptions

The linear programming analysis is based upon the following assumptions:

- (i) The decision-making body is faced with certain constraints or resource restrictions. They may be credit, raw material and space constraints on its activities. The type of constraints in fact depend upon the nature of problem. Mostly, they are fixed factors in the production process.
- (ii) It assumes a limited number of alternative production processes.
- (iii) It assumes linear relations among the different variables which implies constant proportionality between inputs and outputs within a process.

(iv) Input-output prices and coefficients are given and constant. They are known with certainty.

(v) The assumption of additivity also underlies linear programming techniques which means that the total resources used by all firms will equal the sum of resources used by each individual firm.

(vi) The LP technique assumes continuity and divisibility in products and factors.

(vii) Institutional factors are also assumed to be constant.

Lastly, for programming a certain period is assumed. For ~~more accurate~~ and more accurate results, the period is generally short, though longer periods are not ruled out.

Programming Technique—Its Application in Planning

In plan formulation, the planners have to decide whether to use labour-intensive or capital-intensive technique of production, depending on its outlay. They will choose that technique which maximises output.

Let us suppose that it is planned to produce a commodity Z using X and Y inputs, its objective is to maximize output Z due to two different production processes, C (capital-intensive) and L (labour-intensive). The constraint is a given cost outlay MP as shown in the figure below. The assumptions given above are applicable. The problem can be stated in terms of Fig. 57.1.

Units of input Y per period are measured along the vertical axis and units of input X per period are shown on the horizontal axis.

points *a* and *c* at the 50 units output level on the linear rays *OC* and *OL* are joined, they form an isoquant (shown, dotted) *I_{asc}*₁. At the 100 units output level, the corresponding isoquant is *I_{bds}*. The cost-outlay constraint is represented by the isocost curve *MP* and it places a limit on the production capacity of the project. The project can produce with either of the two available techniques *C* and *L* within the area represented by the triangle *Obd*. It is not possible for it to produce outside this "area of feasible solutions." The "optimal solution" which maximises the output will occur at the point where the isocost curve touches the isoquant with the highest output. In Fig. 57.1 the isocost curve *MP* touches the isoquant *I_{bds}* at point *b* on the process ray *OC*. It shows that the project will use the capital-intensive technique *C* by using four units of input *Y* and two units of input *X* and produce 100 units of commodity *Z*.

Take another project whose objective function is to maximise its revenue subject to certain constraints of limited capacities. Suppose it

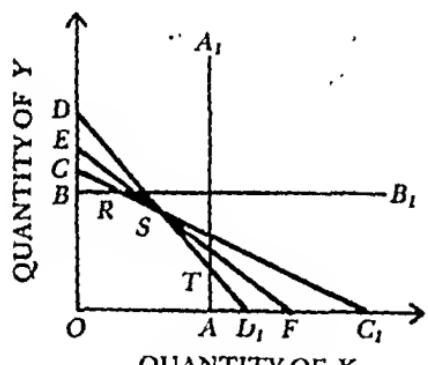


FIG. 57.2

produces two products, *X* and *Y*. It has four departments each with a fixed capacity. Let these departments relate to manufacturing, assembling, polishing and packing the product which be designated as *A*, *B*, *C* and *D*. The problem is illustrated graphically in Fig. 57.2.

The production of *X* and *Y* is subject to constraints *A*, *B*, *C* and *D*. Constraint *A* limits the production of *X* to *OA*. Constraint *B* limits the production of *Y* to *OB*.

Constraint *C* limits the production of both *X* and *Y* to *OC*₁, and *OC* respectively, while constraint *D* limits their production to *OD*₁ and *OD*. The area *OATSRB* shows all combinations of *X* and *Y* that can be produced without violating any constraints. This is the area of feasible production within which *X* and *Y* can be produced, but there is no possibility of producing any combination at any point outside this area.

The original solution can be found out by taking an isoprofit line within the feasibility zone. An isoprofit line represents all combinations of *X* and *Y* which yield the same profit to the firm. The optimal solution lies on the highest isoprofit line *EF* in the polygon *OATSRB*. This is point *S*. Any point other than *S* lies outside the zone of feasible production.

Every linear programming maximisation problem has its *dual* problem, that of minimisation. The original problem is known as the

primal problem, which always has its dual. If the primal problem pertains to maximisation, the dual involves minimisation, and vice-versa.

Now we take another planning problem. Suppose the planners undertake a project which aims at *minimisation of costs*. Two types of goods X_1 and X_2 are to be produced. Let the planners attach weights of 3 and 8 to units of these goods. Let there be 2 units of resource X_1 and 6 units of resource X_2 . Let the production of 1 unit of X_1 use 1 unit of input C_1 and 2 units of input C_2 . Similarly, let the production of X_2 use 2 units of C_1 and 8 units of C_2 . The problem can now be set in the linear programming form as:

$$\text{Maximise } 3X_1 + 8X_2 \text{ (R, i.e., revenue)}$$

Subject to the constraints

$$X_1 + 2X_2 \leq 2$$

and $2X_1 + 8X_2 \leq 6$
and none of these quantities is negative. The optimal solution is $X_1 = 2$, $X_2 = 1/2$ and $R = 7$

The *dual problem* is:

Let P_1 be the imputed price of X_1 and P_2 be the imputed price of X_2 ,
Minimise $2P_1 + 6P_2$ (C , i.e., cost)

Subject to the constraints

$$P_1 + 2P_2 \geq 3$$

and $2P_1 + 8P_2 \geq 8$
and that none of these prices is negative. The optimal solution is

$$P_1 = 1, P_2 = 1/2 \text{ and } C = 7.$$

These are the shadow or dual prices. But as all values have been imputed to the two resources, the maximum value of the objective function C must equal R . Hence $C = R = 7$.

Graphically line AB represents $P_1 + 2P_2 = 3$ and line CD represents $2P_1 + 8P_2 = 8$. The feasible solutions lie on or above the thick line YZD in figure 57.3. The optimal solution is at point Z where the iso-cost (dotted line) RK passes through the point of intersection of AB and CD .

Limitations of Linear Programming

Linear programming has turned out to be a highly useful tool of analysis in development planning. But it has its limitations. As a matter of fact, actual planning problems cannot be solved directly by the LP technique due to a number of restraints. *First*, it is not easy to define a specific objective function. *Second*, even if a specific objective function is laid down, it may not be so easy to find out the various socio-institutional, financial, and other constraints which may be operating pursuing the given objective. *Third*, given a specific objective function of constraints, it is possible that the constraints may not

expressible as linear inequalities. *Fourth*, even if the above problems are surmounted, a major problem is one of estimating relevant value of

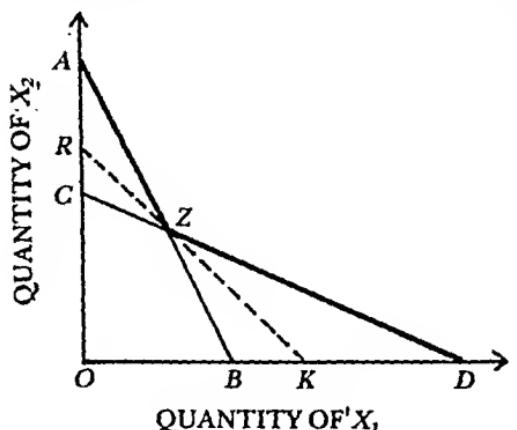


FIG. 57.3

, even if the above problems of estimating relevant value of the various constant coefficients that enter into an LP problem, i.e. population, prices, etc. *Fifth*, one of the defects of this technique is that it is based on the assumption of linear relations between inputs and outputs. This implies that inputs and outputs are additive, multiplicative and divisible. But the relations between inputs and outputs are not always linear. In real life, most of the rela-

In real life, most of the rela-

tions are non-linear. Sixth, this technique assumes perfect competition in product and factor markets. But perfect competition is not a reality. Seventh, the LP technique is based on the assumption of constant returns in the economy. In reality, there are either diminishing or increasing returns.

Further, it is highly mathematical and complicated technique. The solution of a problem with linear programming requires the maximisation or minimisation of a clearly specified variable. The solution of a linear programming problem is also arrived at with the 'Simplex method' which involves a large number of mathematical calculations. It requires a special computational technique, an electric computer or desk calculator. Such computers are not only costly, but also require experts to operate them. Mostly, the LP models present trial-and-error solutions and it is difficult to find out really optimal solutions to the various economic problems.

Uses of Linear Programming in Planning

Linear programming as a tool of economic development is more realistic than the input-output approach. In input-output analysis only one method is adopted to produce a commodity. It does not take into consideration the bottlenecks (constraints) which a development project has to face in underdeveloped countries. But in linear programming a definite objective is set to maximize income or minimise costs. All possible processes or techniques are taken into account for achieving the desired objective. This necessitates even the substitution of one factor for another till the most efficient and economical process is evolved. Some projects and techniques which are too uneconomical to implement are

not undertaken. By assuming certain constraints, linear programming as a tool of development planning is superior to the input-output technique. In underdeveloped countries, the planning agencies are faced with such constraints as the lack of sufficient capital and machinery, growing populations, etc. Resources exist that cannot be used properly for want of the co-operant factors. Linear programming takes due note of these constraints and helps in evolving an optimum plan for attaining the objectives within a specified period of time. Thus the LP technique has been used for constructing theoretical multi-sector planning models for countries like India. Such models extend the consistency models of the input-output type to optimization of income or employment or any other quantifiable plan objective under the constraints of limited resources and technological conditions of production.

In practice, however, the LP technique is being used in solving a limited number of economic problems in developing countries. This is due to the lack of proper personnel for working out mathematical equations and for operating highly mechanical computers. Mostly the LP technique has been found to be extremely useful for sectoral planning in developing countries, for example, in selecting optimum alternatives in respect of location and technologies in industries, transport, and power or in farm management. For example, this technique is being used in farm management for determining the optimum combination of different crops, livestock and crops. The objective function used in such studies is either the minimisation of costs or the maximisation of income. The constraints are set by pre-determined levels of demand or the availability of resources such as raw materials or capacity. Besides, this technique is being used for the solution of diet problem where the aim is to minimise costs, given the values of minimum nutrients of the diet and the prices of products as constraints. It is also with the LP technique that the transport problem is being solved by the railways, airways and transport companies with regard to the selection of routes, transportation of goods, allocation of the means of transport (*i.e.*, railway wagons, aircrafts, trucks etc. depending on the type of transport under study). Again, this technique is used to assign jobs to the work force for maximum effectiveness and optimum results subject to constraints of wages and other costs. Similarly, purchasing, assembling, production and marketing problems are being solved through the LP technique in order to minimise costs and maximise profits, given the various constraints in the case of each problem. However, for an extensive use of this technique for development planning, developing economies will have to depend upon large resources of trained personnel, and finance.

Chapter 58

THE CONCEPT OF CAPITAL-OUTPUT RATIO

MEANING

The concept of capital-output ratio (or capital coefficient) expresses the relationship between the value of capital investment and the value of output. It refers to the amount of capital required in order to produce a unit of output. When the capital-output ratio in the economy is said to be 5:1, it implies that a capital investment of Rs. 5 crores is essential to secure an output (income) worth Rs 1 crore. It may thus be defined as "a given relationship between the investments that are to be made and the annual income resulting from these investments." The capital-output ratio is of two types: the average capital out-put ratio and the marginal or the incremental capital-output ratio. The average capital-output ratio indicates the relationship between the existing stock of capital and the resultant flow of current output. The incremental capital-output ratio (ICOR) expresses the relationship between the amount of increase in out-put (income) ΔY , resulting from a given

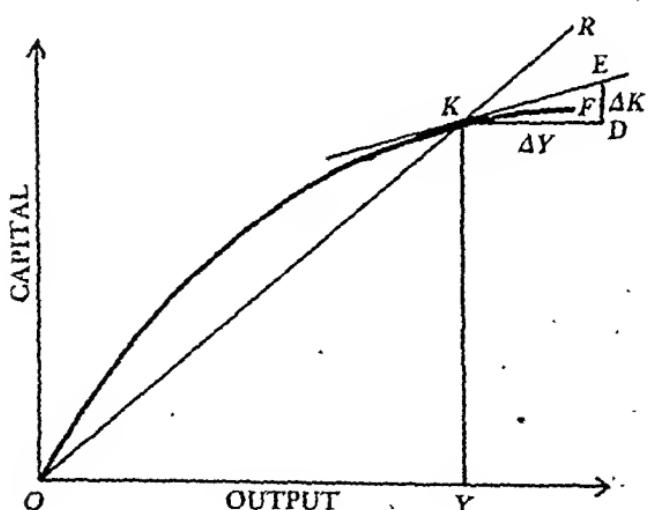


FIG. 58.1

increase in stock of capital, ΔK . This can be indicated as $\Delta K/\Delta Y$. In other words, "the average capital-output ratio refers to everything that has been invested in the past and to the whole income. The marginal ratio refers to all that has been added in a recent period to the capital or income."¹ The former is a static con-

¹Tinbergen, *Development Planning*, p. 79.

cept, while the latter is a dynamic one. The term capital-output ratio as used in economics relates to the incremental or marginal capital-output ratio. This ratio normally ranges between 3 to 4 and rotates to a period of time. Since it has a time dimension, it is expressed as "recoulement period" in the communist countries.

The average capital-output ratio and the ICOR are shown in Fig. 58.1 where output is taken on the horizontal axis and capital on the vertical axis. The average capital-output ratio is measured by the slope of a line from the origin to the function relating capital to total output. In our figure *OKF* is such a function and *OR* is the ray that passes through it at point *K* so that the ACOR is KY/OY . The ICOR is measured by the slope of a tangent drawn to the function at point *K*. Thus the ICOR is ED/KD ($= \Delta K/\Delta Y$).

The concept of capital-output ratio is applicable not only to an economy but also to its different sectors. There are different capital-output ratios for different sectors of the economy depending on the techniques (capital-intensive or labour-intensive) used by them. In a sector using capital-intensive techniques the capital-output ratio would be high and in an other sector using labour-intensive techniques the capital-output ratio would be low. Transport, communications, public utilities, housing and capital goods industries have very high sectoral capital-output ratios. While capital-output ratios in the agricultural sector, manufactured consumers' goods industries and service industries are generally low. The overall capital-output ratio for a country is the average of the sectorial ones.²

Capital-Output Ratio In Underdeveloped Economies

Various estimates have been made of capital-output ratios in underdeveloped economies. A group of experts appointed by the United Nations used a ratio ranging from 2:1 to 5:1. Kurihara has assumed a ratio for majority of underdeveloped countries in the order of 5:1; Singer in his model for economic development assumes a ratio 6:1 in the non-agricultural sectors and 4:1 in the agricultural sector and on an average takes a ratio of 5:1; Resenstien-Rodan estimates that the ratio is at least 3:1 and 4:1;³ while Lewis regards this ratio to lie between 3:1 and 4:1.⁴ According to H.K. Manmohan Singh in developed countries the range of capital-output ratio is believed to lie between 2.9:1 and 4:1, and in underdeveloped countries this ratio ...⁵

²W.B. Reddaway, "The Capital-output Ratio," *Indian Economic Review*, 1960

³Meier and Baldwin, op. cit., p. 340

⁴Lewis, op. cit., p. 201.

supposed to lie between 1.5:1 and 2:1.⁵ In India the ICOR on an average works out to 2.4 for the three plan periods.⁶

Factors Determining Capital-Output Ratio

The size of the capital-output ratio in an economy depends not only on the amount of capital employed but also on a number of other factors such as, the degree and nature of technological advance, the efficiency in handling new types of capital equipment, the quality of managerial and organizational skill, the composition of investment, the pattern of demand, the relation of factor prices, the extent of the utilization of social and economic overheads and the impact of industrialization, education and foreign trade on the economy. Let us examine these factors in detail.

Availability of Natural Resources. *First*, capital-output ratio depends on the availability of natural resources. A country with abundant natural resources has a low capital-output ratio, for it can substitute natural resources for capital. For example, Norway is a country which has a very high capital-output ratio because she is not endowed with natural resources.

Growth of Population. Hagen points out that in industrial countries with a rapidly growing population, the capital-output ratio tends to be low. For population growth leads to substantial capital saving in social overheads. Further, population growth absolves an economy from the consequences of errors in investments and 'new investment does not so gravely cause old investments to obsolesce.' In the case of an agricultural country, however, population growth has an adverse effect on the capital-output ratio. If a growing population is absorbed on the cultivable land existing in abundance then not much of capital is required per unit of output, on the assumption that people work with simple tools and implements and no extra public utility services are required. But if the increase in population is concentrated in the towns, more capital will be required to meet its requirements on more houses, power, water, schools, consumption goods etc.

Amount of Capital Employed. The amount of capital employed in a country is an important factor in determining the capital-output ratio. Given the average life of capital, the capital-output ratio is determined by the proportion of national income invested annually. So it is not surprising, writes Professor Lewis that countries which invest much the

⁵H.K.M. Singh, *Demand Theory and Economic Calculation in a Mixed Economy*, p. 83.

⁶Government of India, Planning Commission, *Fourth Five-Year Plan*, 1969-74.

same proportion of national income have much the same capital-output ratio.⁷

Degree and Nature of Technological Advance. If technical progress is accelerated due to a major innovation, the capital-output ratio will tend to rise. The nature of technological advance refers to capital-intensive and labour-intensive innovations. If technological advances are capital-intensive in character, the capital output ratio will tend to rise. On the other hand, if technological inventions are labour-intensive in nature, the capital-output ratio will tend to fall.

Rate of Investment. Capital-output ratio also depends upon the rate of investment. The higher the rate of new investment, the higher is the capital-output ratio. A country which doubles its capital in ten years will have a higher output per unit of capital than a country which doubles it in twenty years. This is because new investment and new technology go together. The technology of the last ten years is embodied in half the capital in the first case, but only in perhaps a third of the capital in the second case.⁸

Efficiency with which New Type of Equipment is Handled. But a low level of efficiency in handling new capital equipment would lead to waste and as a result the capital-output ratio would be high and vice versa.

Composition of Investment. The pattern of investment in an economy depends upon the policy of the government. If the government plans a heavy expenditure on public works and public utilities like railways, power, schools, etc., the capital-output ratio would be high. It would also be high in the case of the development of basic and heavy industries. But the capital-output ratio would be low if the pattern of investment is inclined more towards the development of agriculture and cottage industries which are labour-intensive.

Quality of Managerial and Organizational Skill. A country in which the quantity and quality of managerial and organizational skill is high, the capital-output ratio will be low. For it is in a better position to use its capital equipment and other productive resources to the fullest extent and thus a larger output can be had with the existing capital. Contrariwise, if the quantity and quality of entrepreneurship are low, the capital-output ratio will be high.

Pattern of Demand. The pattern of demand also influences the capital-output ratio. Given the prices and incomes in a perfectly competitive economy, changes in tastes and preferences of the consumers may change the pattern of demand through time. This may,

⁷Op. cit., p. 202.

⁸W.A. Lewis, Development Planning, 1966.

in turn, have important effects on the demand for capital and on the capital-output ratio. For example, the demand for synthetic materials and products like terylene, nylon, etc., has led to the establishment of plants for their manufacture thereby raising capital-output ratio.

Relation of Factor Prices. A change in factor prices (*i.e.*, wages, interest, rent, etc.) affects the capital-output ratio to the extent capital can be substituted for other factors of production. Changes in the rate of interest or wages may affect the demand for capital, thereby affecting the capital-output ratio. A reduction in the rate of interest, other factor prices remaining constant, is likely to increase investment demand for capital and thus raise the capital-output ratio. Similarly a rise in the wage level, other things remaining the same, may raise the capital output ratio if there is a possibility of capital being substituted for labour.

Employment Policy. Capital-output ratio further depends on employment policy. In an overpopulated country like India where unemployment exists on a mass scale the policy of the State to provide immediate relief to the unemployed will lead to capital investments on roads, water works, land reclamation, hospitals, schools, houses, and other public works. But if the government policy is towards absorbing the unemployed in large industries especially in manufacturing industries, the capital-output ratio would be smaller. But less of capital and labour will be employed in such industries as compared to the public works.

Industrialization. Industrialization tends to raise the capital-output ratio. Industrialization leads to urbanization. Urbanization involves the movement of works from the rural areas to the towns which necessitates larger investment in house building industry, as a result the capital-output ratio is pushed up.

Spread of Education. With the spread of literacy and education, efficiency increases which tends to make a better use of capital equipment whereby the capital-output ratio falls and vice versa.

Use of Social and Economic Overheads. In the early stages of economic development there is a tendency to invest more in social and economic overheads which take a long time to fructify; meanwhile the capital-output ratio tends to be high. But with the passage of time, fuller utilization of social and economic overheads creates external economies and leads to increasing returns. This further leads to the fullest utilization of existing capital equipment thereby increasing the output. Thus the capital-output ratio is damped.

Impact of Export and Import. In order to earn more foreign exchange and to avoid balance of payments difficulties, the export sector requires heavy capital expenditure to push up exports. This tends to raise the

capital-output ratio. If the nature of investment is such that larger quantities of capital equipment are imported and huge expenditures are incurred on it, the capital-output ratio would be high and vice versa.

Nature of Capital-Output Ratio

It is, however, not possible to arrive at any definite conclusion about the behaviour of the capital-output ratio from the factors enumerated above. But a number of economists have proved on the basis of empirical data based on developed economies that the capital-output ratio first tends to rise then declines as development gains momentum and even becomes stable over a long period. Prominent among these economists are Colin Clark,⁹ Simon Kuznets¹⁰ and Leibenstein.¹¹ This parabolic nature of the capital-output ratio is supported by the following empirical evidence. In the United States the capital-output ratio rose from 2.8 in 1880 to about 3.9 in 1929 and then fell to 3.2 in 1944,¹² and to 1.6 in 1960. In the UK, it rose from about 4.5 in 1865 to over 6 in 1895 and stayed almost stable up to 1913,¹³ when it started declining and was 2.9 in 1952.¹⁴ No doubt, these estimates relate to developed economies yet they are a useful guide in understanding the general behaviour of the capital-output ratio in underdeveloped economies. V.V. Bhatt on the basis of his computations of Indian industries and their comparison with the industries of the developed countries comes to the conclusion that the capital-output ratio is on the average about the same in both developed and underdeveloped economies.¹⁵ The experience of a number of countries suggests that on the average the ratio lies between 3:1 to 4:1 and above 4:1 only in periods of slow economic growth. A UN Study corroborates that during the ten years ending in 1963 about 70 per cent of the developing countries had an incremental capital-output ratio ranging between 3 and 4.¹⁶ We may wind up the discussion thus, "In the early stages of economic development two contrary forces operate on the capital-output ratio. On the one hand, there is a vast requirement of basic overhead capital in transport, power, education, etc. Here, due mainly to the long period over which such investment yields its return, the apparent (short run) capital-output ratio is high.

⁹Colin Clark, *The Conditions of Economic Progress*, p. 580

¹⁰Population, Income and Capital, *International Social Science Bulletin*, 1954, No. 2, Vol. 6.

¹¹Economic Backwardness and Economic Growth, pp. 177-85

¹²Simon Kuznets, *op. cit.*, pp. 169-70

¹³Ibid.

¹⁴K. Manmohan Singh, *op. cit.*

¹⁵V.V. Bhatt, *Employment and Capital Formation in Underdeveloped Economies*, pp. 30-59.

¹⁶World Economic Survey—1966, *op. cit.*

On the other hand, there are generally large unexploited backlogs of known techniques and available natural resources to be put to work; and these backlogs make for a low capital-output ratio. We can assume formally a low capital-output ratio for take-off period *on the assumption* that the pre-conditions have been created. In fact, the aggregate marginal capital-output ratio is likely to be kept high during the take-off by the requirement of continuing large outlays for overhead items which yield their returns only over long periods. Nevertheless, a ratio of 3 : 1 or 3.5 : 1 for the incremental capital-output ratio seems realistic as a rough bench-mark.¹⁷

Case for Low or High Capital-Output Ratio in Underdeveloped Countries

Economists, however, differ on the issue whether the capital-output ratio should be low or high in underdeveloped countries.

Low Capital-Output Ratio. Those who favour a low capital-output ratio advance the following arguments:

(1) Professor Lewis point out that the ratio of capital in existence to annual income is much lower in underdeveloped countries because their rate of capital accumulation has been much smaller.¹⁸

(2) In underdeveloped countries natural resources are underutilized or unutilized and a small capital investment will lead to a large output.

(3) Similarly, in an underdeveloped country other productive resources are underutilized and their productive capacity is low. So when a country starts on the road to economic progress land, labour, management and existing plant and equipment are brought back into productive use. Thus their productive capacity increases more than the amount of capital invested.

(4) The capital-output ratio is lower in those countries where population grows more rapidly. The reason being that "rapid population growth prevents waste of capital by assuring markets for almost any investment; and a rapid increase in the labour supply permits capital accumulation without departing from the optimal ratio of labour to capital."

(5) In view of the shortage of capital and the abundance of labour, there is greater incentive to use capital-saving methods of production in underdeveloped countries.

(6) If in the early stages of development, it is planned to concentrate on agricultural development and other labour-intensive industries, the

¹⁷W.W. Rostow, *The Process of Economic Growth*, op. cit., p. 211. Italics mine.

¹⁸W.A. Lewis, op. cit., p. 202.

capital-out ratio will be low. For it is possible to have a large output with a smaller amount of capital.

(7) Since capital is not fully utilized in underdeveloped economies the rate of depreciation is lower which means longer life of plant and equipment and low capital-output ratio

High Capital-Output Ratio. Economists who favour a high capital-output ratio for underdeveloped countries adduce the following reasons:

(1) The capital-output ratio is higher in underdeveloped countries because there is much wastage in the use of capital. Capital is wasted in the sense that manpower is inefficient in handling and maintaining capital equipment properly. Moreover, due to the ignorance of fruitful investment opportunities, capital is unable to move out of the rut to be utilized in more productive channels

(2) The level of literacy and education is extremely low in such countries with the result that technological knowledge grows very slowly and where the growth of technological knowledge is slow, capital is less fruitful.

(3) The capital-output ratio is bound to be high in those underdeveloped countries where a large quantity of capital is needed to tap unutilized or underutilized natural resources. As is the case with oil exploration in India.

(4) Moreover, countries with limited natural resources require more substitution of capital for them.

(5) The capital-output ratio is expected to be high in those countries where population increases more slowly than in those where it increases rapidly, on the premise that "capital is likely to yield more if used with a greater rather than with a smaller increase of labour."

(6) As an economy moves on the path of economic development, the pattern of demand is likely to change which may necessitate the establishment of more capital-intensive industries. For example, a change in demand from hand made to machine made goods would increase the demand for capital

(7) In the early stages of development, underdeveloped countries have to make large capital investments in order to provide social and economic overheads such as schools, hospitals, roads railways, and electricity, etc. Thus the capital-output ratio is bound to be high.

(8) According to Professor Kunihara, one basic explanation for the needlessly high capital-output ratio of an underdeveloped economy is the promotion of more labour-intensive techniques which may reduce output thus necessitating a greater use of capital.¹⁹

¹⁹K. Kunihara, op. cit., pp. 94-97.

(9) In underdeveloped countries interest rate is very high and this is another important explanation for the capital-output ratio to be so high in such economies. On the face of it, it sounds paradoxical, for a high rate discourages rather than encourages the use of capital and thus has a tendency to lower the capital-output ratio. Kurihara admits this fact but solves this paradox by applying the reasoning that "the expectation of a continuing high interest rate tends to promote less 'capital-intensive' (or more 'labour-intensive') techniques and, via the latter's decreasing impact on output to make for a high capital-output ratio, given a constant wage rate and a constant net profit rate."²⁰

(10) In underdeveloped countries where new plants and enterprises are located away from the sources of raw materials, capital investment may be larger relatively to output thereby raising the capital-output ratio.

(11) Lastly, in the initial stages of development certain types of capital investments are likely to remain underutilized due to the stagnant nature of an underdeveloped economy thus raising the capital-output ratio.

Limitations

The use of capital-output ratio as a tool for estimating capital requirements in underdeveloped countries is beset with a number of limitations.

(1) "Precise calculations of capital-output ratios can be made only in the light of concrete programmes of development and the technical data regarding costs and output."²¹ But such data are not easily available in an underdeveloped economy. Concrete programmes of development are hampered by lack of capital equipment, labour and entrepreneurial skills, changes in demand, prices and climatic conditions which adversely affect the output.

(2) The capital-output ratio is not likely to remain constant throughout a plan. It is bound to change as the development plan proceeds from year to year. As a result, there is wide disparity between the projected ratio and the actual ratio. For instance, the First Indian Five-Year Plan assumed a marginal capital-output ratio of 3:1 but realized 1.8:1 in practice.

(3) The use of capital-output ratio as a tool of economic planning is circumscribed by the presence of underutilization of excess capacity in the use of resources in an underdeveloped economy. It is, therefore, difficult to calculate the capital-output ratio accurately.

²⁰Ibid., pp. 98-99.

²¹Government of India, *Second Five-Year Plan, op. cit.*

(4) The capital-output ratio is meant to estimate the total capital requirements of an economy but fails as a tool for determining priorities among different sectors or projects in the economy.

(5) The capital-output ratio fails to tell us anything about investment in human capital required to achieve a certain rate of growth. Investment in human capital is as important for economic growth as is physical capital.

(6) There is, however, a practical difficulty in calculating the capital-output ratio. It assumes that there is no change in the general art of production. But it is possible that a technological innovation may increase output with the same amount of capital or the same output may be had with less capital thereby changing the capital-output ratio altogether.

(7) The concept of capital-output ratio is based on the implicit assumption that when capital increases the supply of co-operant factors also increases. But in an underdeveloped economy the co-operant factors like technical personnel, entrepreneurship, power, transport, etc., are scarce. The concept is thus impracticable in the context of an underdeveloped economy.

(8) Difficulties arise in the measurement of "capital" and "output." Professor Myrdal mentions the following: *First*, in underdeveloped economies all planned public investment and estimated private investment are lumped together to arrive at capital input which is not a correct estimate of capital investments for they are likely to change. *Second*, various restrictions and direct controls prevent prices from equalising demand and supply. It requires the use of shadow prices which is again arbitrary. *Third*, "the specificity, heterogeneity, complementarity and indivisibility of capital in South Asia make aggregation impossible." *Fourth*, "if there are several items on each side of the capital-output ratio, and if those do not change in the same proportion, we are faced... with the problem of index numbers, including the indeterminacy introduced by price changes in the planning period and by different income distributions." Further, "anything that changes the relative prices of capital goods and consumer goods generally, whether from the demand side or the supply side will alter the capital-output ratio, even without any change in physical capital, physical output or technology. In particular, changes in real wages, in the rate of interest and in the prices of imports will change the capital-output ratio, even though neither the composition of capital nor techniques have changed."

(9) During a depression, all increases in capital will be followed by declines in output and the capital-output ratio becomes a meaningless concept in such a situation.

(10) Above all, the use of capital-output ratio as a technique for testing the development plans of a country does not take us very far unless we go behind it. The overall capital-output ratio is the average of the sectoral ratios. The national output is the sum of different goods and services produced by various sectors of the economy, each having a different capital-output ratio. The sectoral capital-output ratios are high for some sectors like housing, transport, communications, irrigation and power projects; and low for the agricultural service and consumers' goods industries. But it is difficult to calculate these sectoral capital output ratios due to lack of statistical data. Conceptional difficulties also arise in the case of certain items like fertilizer production which can be placed in either the agricultural sector or the heavy industries sector. Thus the overall capital-output ratio which is a made up of sectoral ratios is not a correct estimation for testing the consistency of the developmental plan.

Conclusion. Despite these theoretical and practical limitations, the capital-output ratio is widely used as a planning device. Its predictability is weak. But it appears to produce more meaningful results in the long run than in the short run. It is analytically useful in calling attention to the importance of capital in economic development. It possesses great usefulness as a handy device for making rough-and-ready calculations. But Professor Kindleberger is of the view that in its present rudimentary stage it is hardly a planning device.²²

Importance in Planning

The capital-output ratio is an important and useful concept for purposes of economic planning in an underdeveloped country. "This is particularly true where it is necessary to check the consistency of targets for the growth of national income against the additional capital likely to be available from current savings of foreign investment." In order to estimate the financial requirements of growth, it is necessary to have an estimate of the volume of investment needed to attain a given target of output. The capital-output ratio is thus used to determine the growth rate of an economy. The Harrod-Domar models of growth are based on this concept.

In formulating a plan, in ICOR is required for the purpose of calculating the growth rate of the economy. Suppose we want to increase national output by 10 and assume the ICOR to be 2. In this case the required addition to the capital stock needed for new investment will be $(10 \times 2 =)$ 20. Assuming the current level of national output to be 1000 and the saving rate 0.04, the domestic saving will be 40. Now this

²²C.P. Kindleberger, *op. cit.*

much of domestic saving can be invested for the purpose of increasing national output. Given the ICOR of 2, this amount of saving and investment would increase national output by 20 ($=40/2$). This gives the growth rate of 2.0 per cent per annum in national income. We can also calculate the growth rate of national output (income) by dividing the saving ratio by the ICOR, i.e., $0.04/2=0.02$ or 2.0 per cent.

Moreover, the importance of capital-output ratio lies in making out the case for obtaining large foreign aid for investment by underdeveloped countries. Since the domestic saving-income ratio is low in underdeveloped countries, a higher rate of foreign aid is required for achieving a higher growth rate, assuming a conventional capital output ratio of 3 to 4. Thus the concept of capital-output ratio is a useful tool which highlights the importance of capital in development planning, helps in testing the consistency of the desired growth rate and the resources of an underdeveloped country.

Chapter 59

THE CHOICE OF TECHNIQUES

One of the problems facing the underdeveloped countries is how best to utilize the available resources in order to accelerate the growth rate of the economy. The majority of such countries have abundant labour but scarce capital. These two major factors pose the problem of choice of techniques—that of using the traditional or the modern methods of production.

Meaning. The problem of choice of techniques refers to the type of combinations for any particular project or enterprise. A combination chosen in any particular case gives the type of technique. The number of alternatives open to an underdeveloped country are between labour-intensive and capital-intensive techniques, between light and heavy industries and between agriculture and industry. But the ultimate choice is one of selecting between labour-intensive and capital intensive methods whether it is in agriculture and industry or in light and heavy industries. "Different techniques often imply quite different strategies in economic development with very different efforts on the performance of the economy."² The ultimate object is to choose that technique which is more efficient than another technique keeping in view the existing factor proportions. An efficient technique is one that minimizes the costs of a given output or maximizes the output from given inputs.

Process of Technological Development. For technological development, a society has to pass through a long historical process—from simple to complex techniques, from those satisfying local needs to those meant for distant markets and from those using local resources to those requiring foreign capital. However Kuznets³ traces some distinct patterns in the growth of technology: (i) a *scientific discovery* or an addition to technical knowledge; (ii) an *invention* that is, making the use of already existing knowledge to useful end; (iii) an *innovation* implying a significant application of an invention to economise production; (iv) an *improvement*, signifying a minor useful change in an invention; and finally, the *spread of invention* usually accompanied by improvements.

¹A slightly modified version of author's article in *AJCC Economic Review*, July, 1967. Published with the kind permission of the Editor.

²A.K. Sen, *Choice of Techniques*, p. 11.

³Simon Kuznets, *Six Lectures on Economic Growth*, pp. 30-32.

The successful completion of these successive phases in the evolution of technology requires four factors. First, there is the necessary condition of increased scientific knowledge. Secondly, each phase requires heavy capital investments and skilled labour force. Thirdly, innovations require entrepreneurial skill and ability to put inventions to beneficial uses. Lastly, the spread of innovations depends on the willingness of the people to adopt the new products and processes for mass production. Technological development is thus a necessary conditions for economic growth.

But the conditions enumerated by Kuznets are conspicuous by their absence in underdeveloped countries which lack educational and research facilities, skilled labour and entrepreneurial ability. Their levels of income, consumption and savings are extremely low and hence also the size of the market. Dynamic entrepreneurship which Schumpeter regarded as the main factor in inducing an innovation is lacking in such economies due to backward social, economic and political institutions. Thus, the type of innovations that contribute to the economic development of the advanced countries cannot be evolved in underdeveloped countries with their existing factor endowments.

Labour-Intensive Techniques. Keeping these points in view, the problem of choice of techniques boils down to one of adopting output-increasing techniques that raise labour productivity per unit of capital and are capital-light and labour intensive. Figure 59.1 explains the impact of labour-intensive techniques on output. Initially, output represented by the isoquant Q was being produced in the economy by employing OK amount of capital and OL of labour. Now with the new

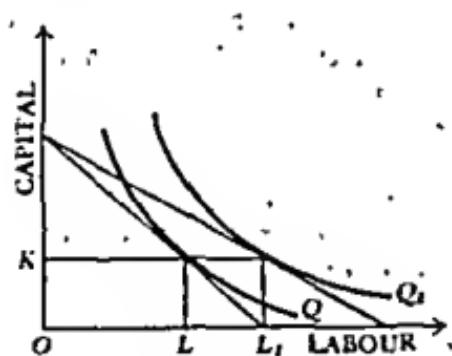


FIG. 59.1

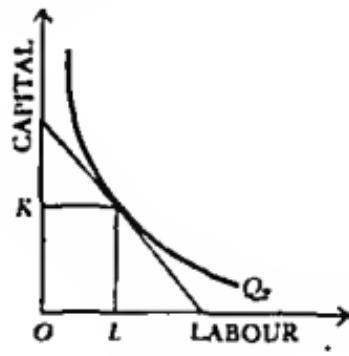


FIG. 59.2

technique the same amount of capital OK helps in producing a larger output represented by a higher isoquant Q_1 , and at the same time it \approx more labour LL_1 . Such techniques should also fulfil the twin ob-

of skill and capital formation. Agricultural production can be increased through the spread of minor irrigation schemes, better tools and implements, the introduction of short duration crops leading to larger yields from the same land; the use of fertilizers and high yielding seeds, etc. In India, the substitution of the fly-shuttle for the throw-shuttle loom led to the increase in the productivity of the hand-loom weaver by 50 per cent.⁴ But it is not true that the choice of more labour-intensive techniques will necessarily lead to either more consumption or greater employment over a period of time. The problem is one of evaluating the time streams of consumption associated with the choice of alternative techniques over the relevant time horizon.⁵ Moreover, underdeveloped countries fail to use output-increasing labour-intensive techniques because of the limits set by the shortage of capital and lack of skills. Besides, as Bert Hoselitz⁶ reveals on the basis of a variety of research papers, a number of economic, social and administrative resistances which force people in such economies to give preference to the use of outmoded techniques over output-increasing methods of production.

Capital-Intensive Modern Techniques. The other alternative commonly suggested is the use of capital-intensive techniques. Since underdeveloped countries are unable to follow the path of technological evolution of the advanced countries they should use the technology of the latter on an extensive scale. Figure 59.2 depicts the use of advanced technology which is capital-intensive. It uses more capital *OK* in relation to labour *OL*. The level of output is higher in this technique on the supposition that the isoquant *Q₂* is above *Q₁* of Fig. 59.1. As Galenson and Leibenstein opine: "Successful economic development... particularly in the face of gross backwardness, hinges largely upon the introduction of modern technology upon as large a scale as possible".⁷ For a "continuing and compounding effect" on the growth rate of income, advanced techniques are considered to be indispensable. Further, their use will help change customary working habits, living conditions, social institutions and the very outlook of the people.

But the adoption of modern technology in underdeveloped countries is a very ticklish question and we should not forget Nurkse's remarks that "the same capital-intensity as in the economically advanced

⁴Report of the Fact Finding Committee (*Handloom and Mills*), Government of India, p. 195.

⁵Ajit K. Dasgupta, *op. cit.* For a detailed explanation refer to Sen's Time Series Criterion in the next chapter.

⁶B.F. Hoselitz, "Problems of Adopting and Communicating Modern Techniques to Less Developed Areas," *Economic Development and Cultural Change*, January 1954.

⁷W. Galenson and H. Leibenstein, "Investment Criteria, Production and Economic Development," *Quarterly Journal of Economics*, August 1955.

countries should be neither desired nor permitted."⁸ First, it is a matter of common knowledge that these countries have a plethora of the unemployed and an acute shortage of capital. Modern technology is, however, highly capital-intensive and labour-saving. It involves high costs and excessively large amount of capital thereby making it unsuitable for underdeveloped countries. Second, imports of plant and equipment are not only costly but also entail a number of difficulties with regard to repairs, maintenance and availability of spare parts. A UN Report observes: "Automatic devices suited to conditions in advanced industrial countries are often left unused in underdeveloped countries, while the intricacy of many machines though appropriate to the type of labour available in industrial countries, tends to magnify repair and maintenance cost in factories in less developed countries which depend upon a high proportion of unskilled labour"⁹ As a result, the same equipment produces less in such countries. It means in terms of our Fig. 59.2 that the isoquant O_2 is at a lower level. Third, heavy imports lead to balance of payments difficulties. And the net addition to the national income accruing from the use of imported plant and equipment is less, for a part of the income flows to the technique-exporting country. Fourth, modern technology also requires complementary supplies of highly skilled, technical and managerial personnel not available in less developed economies. Fifth, it is meant for the setting up of larger enterprises whereas the small size of the market in such countries necessitates the expansion of small enterprises. In such a situation, write Bauer and Yamey, there is the danger of confusing standards of technical efficiency with those of economic efficiency. There is no use recommending techniques which may be efficient technically but are wasteful in terms of resources and inappropriate at the level of technical achievement of the local population.¹⁰ Sixth, modern technology was evolved under different socio-economic and geographical set up. It is meant to accommodate labour shortages and other requirements of an advanced country. It is appropriate to high real wages and a high standard of living. Seventh, the possibility of introducing such technology will, however, depend on the technological spread—the gap separating the techniques already in vogue in the less developed country and those imported from abroad. The larger the gap between the local and the imported techniques, the greater will be the social discontent and unrest following industrialization through the introduction of advanced technology. Last, the adoption of modern

⁸R. Nurkse, op. cit., p. 45.

⁹UN, *Processes and Problems of Industrialization in Underdeveloped Countries*.

¹⁰P.T. Bauer and B.S. Yamey, op. cit., p. 213.

technology presupposes the existence of power, transport and communications facilities, of highly trained technical personnel and a large number of related services which are non-existent in underdeveloped countries. Under the circumstances, the use of advanced technology will only result in repeated breakdowns in the machinery, lower production, increase in costs and wastage of capital.

Use of Abandoned Techniques of Advanced Countries. But the problem of economic development is concerned with change in factor proportions and how rapidly they change. It depends on the time-period involved. Capital-light and labour-intensive techniques might help in raising the level of output, employment and income during the short period to some extent. Development, however, aims at their continuous maximization over the long period. The question is whether an underdeveloped country should go slow or make rapid strides towards developing its economy. Should it introduce modern technology or continue to use backward methods of production or adopt obsolete techniques abandoned long ago by the advanced countries? Taking the last question first, the other two having been already discussed above, backward economies have frequently made use of obsolete equipment and techniques of the advanced countries. The history of the Japanese textile industry reveals that it developed in its early phase on discarded British machines. Israel and Argentina have also been importing used equipment of the advanced countries. Though discarded machines are considered to be somewhat cheap and of a lower capital intensity, they entail high costs in terms of repeated breakdowns and constant repairs. Therefore, prudence demands that developing countries should benefit from the vast fund of knowledge in the field of technology of the advanced countries and modify and adapt the techniques of the latter according to their social, economic and technical absorption capacity and requirements. These requirements necessitate in the initial stage of development, the adoption of labour-intensive and capital-saving techniques so that the limited amount of capital available is broadly spread in utilizing larger human and other resources.

Intermediate Technology. Professor Schumacher¹¹ favours intermediate technology for LDCs. According to him, if we define the level of technology in terms of 'equipment cost per workplace', the intermediate technology would be on the level of—symbolically speaking £10 equipment cost per average work-place, whereas it is £1 for the indigenous technology of a typical developing country and £1000—technology for the developed countries. Such a technology necessitates regional approach to development and requires four conditions for it

¹¹E.F. Schumacher, *Small is Beautiful*, 1973.

success. *First*, workplaces should be created in those areas where the majority of the people live and not in metropolitan areas where they tend to migrate. *Second*, workplaces should be cheap so that they can be created in large numbers without requiring high level of capital formation and imports. *Third*, methods of production should be fairly simple, requiring low skills and suitable for maintenance and repair on the spot. *Fourth*, production should mainly depend upon local materials and be mainly for local use. Thus the intermediate technology will be 'labour-intensive' and will be suitable in small scale industries. Therefore, such a technology can be used to produce only those commodities which are urgently needed by the people living in rural areas. Such commodities can be building materials, clothing, household goods, agricultural implements, etc.

Appropriate Technology. There is, however, unanimity among economists over the choice of appropriate technology. According to Yale Brozen, "The appropriate technology for an area depends on its resources, patterns and its markets." It is, therefore, defined as "an amalgam of skills, methods, techniques, appliances and equipment that can contribute towards solving the basic socio-economic problems of the concerned communities." It should be utilised for development purposes in the name of social justice and should be capable of satisfying the felt needs of the people. It should be economically viable, technically feasible, and should fit in the socio-economic fabrics of local communities. It should be able to produce some surplus, so as to encourage capital formation and stimulate further growth. It should be simple and comparatively cheap and use local resources. It should ensure proper control of the means of production at local levels. It should be labour-intensive and capital-saving. It should ensure dispersal of wealth among the largest number for people and create a sense of participation and decision-making at the local level. It should be capable of creating self-reliance and should perpetuate the emotional attachment of the workers with their jobs, tools and work places. It should encourage production by masses rather than mass production. It should be ecologically sound and should be in complete harmony and conformity with local environments. Dependence on non-renewable sources of energy should be at a minimum. It should not be static but dynamic and should be able to absorb innovation thus promoting to improve efficiency and productivity. In other words, appropriate technology should change with the time, and people should accept the improved and latest versions of it that fit in the new environments. It should neither be based on traditional technology nor reject modern technology.¹²

¹²R Das, *Appropriate Technology Precepts and Practices*, pp 11-14, 1975

In all advanced countries from the US to Japan; there are small industrial units and agricultural areas where techniques and equipment of a low capital-intensity are used. Efforts should be directed towards "choosing the simplest of such alternative techniques, the sturdiest of available capital equipment, the small type of plant consistent with technical efficiency, the technology that makes the best use of the most plentiful factors of production."¹³ In certain cases much simpler modern techniques involving small capital may bring about large increments in output in the case of small industries. Low-cost high productivity equipment and machines can be imported from advanced countries and their prototypes manufactured within the country with indigenous skill and raw materials. It will serve the dual purpose of skill and capital formation. In the agricultural sphere, the use of power driven pumps, the Japanese method of rice cultivation, high yielding maize hybrids and improved fertilizer can go a long way in increasing productivity per worker. In the case of those underdeveloped countries which have just started on the path of economic development, it is better to adopt well-tried capital-saving labour-intensive productivity-raising technology originating from the developing countries. For instance, India manufactures a large number of farm implements indigenously designed, such as the mechanical plough; animal driven ploughs of a number of varieties, hand tools, irrigation equipment, dairy and poultry farm equipment which can fit in the factor proportions of similar countries without any difficulty. This is nothing except appropriate technology.

Vakil and Brahmanand also favour this when they opine that "each country has to work out its own salvation, and particularly to find out which production methods are feasible for it."¹⁴ They recommend the following techniques for use in underdeveloped countries: (a) those which can be easily learnt in a short time; (b) those requiring small initial investment; (c) those which reduce the gestation period of investment; (d) those requiring less investment in specialized and skilled labour; (e) those saving scarce resources rather than labour; and finally, those which raise the level of production and increase supplies of minerals or electricity. These guidelines point towards the use of appropriate technology in developing countries in keeping with their local conditions. As Henry Aubrey emphasizes: "It may be sound procedure to improve technology step by step in many places at once, rather than to sink large portions of a limited capital supply in a few

¹³UN, Process and Problems, *op. cit.*, p. 43.

large ventures."¹⁵ This policy is advantageous in many ways. It spreads the benefits accruing from the use of different techniques in the various fields more equally over the entire population; helps in skill formation at all levels; raises the average productivity, income level and the size of the market. It promotes more employment, better distribution of wealth and paves the way towards self-sufficiency. The strategy of gradual changeover from capital-light and labour-intensive methods of production to up-to-date capital-intensive methods is best suited to underdeveloped countries in the early stages of industrialization. Such a policy will not only economize the use of available capital resources but will also create larger employment opportunities. By increasing the supply of agricultural and manufactured consumer goods, it will obviate the necessity of importing food and raw materials. It will not be essential to import much capital goods either. Thus, this strategy in the choice of techniques will tend to check inflationary tendencies and balance of payments difficulties inherent in the development process.¹⁶

Labour-Intensive vs Capital-Intensive Techniques¹⁷

A common characteristic of underdeveloped countries is the scarcity of capital and abundance of labour. In other words, the capital-labour ratio is extremely low. Commonsense tells us that in such countries efficient production calls for labour-intensive techniques. But this is essentially a static argument. It is relevant to conditions prevailing at a point of time. Therefore, this technique is not very suitable for a developing country. As Dobb says, "It starts from a given endowment of capital in each country, whereas the crucial question is discussing policies of economic development concerning the relative capital-endowment of country and how rapidly this endowment should be changed."¹⁸

Though Professor Nurkse holds the view that underdeveloped countries should adopt labour-intensive techniques in the early stages of industrial development, major

¹⁵H. G. Aubrey, "Small Industry in Economic Development," *Economic Review*, September, 1951.

¹⁶Also see the conclusion to the next section.

¹⁷The words 'labour-intensive' and 'capital-intensive' is a wrong notion. Professor Reddaway makes a distinction between the two in his book *The Development of the Indian Economy*. He says, "The conventional way is one in which a large amount of capital is used to produce a given amount of output; the amount of labour is relatively small. In another way the disjunction between capital and labour can be made."

¹⁸Some Aspects of Economic Development.

the adoption of capital-intensive techniques in such countries. Let us discuss the arguments advanced in favour of either of these techniques.

Arguments for Labour-Intensive Techniques. The arguments usually advanced in favour of labour-intensive techniques are the following:

(1) The first is the *employment argument*. A characteristic feature of underdeveloped countries is the abundance of idle manpower. It is only by using labour-intensive techniques that increasing employment opportunities can be provided to the idle or underemployed labour force.

(2) When employment increases through the adoption of labour-intensive techniques, "they spread the total income generated more widely over the population." This paves the way for an egalitarian structure of society.

(3) The third is the *latent resources argument*. In underdeveloped countries there is an acute shortage of capital and entrepreneurial resources. The use of labour-intensive techniques would be more appropriate for releasing these scarce resources to be used in more important uses.

(4) Similarly, labour-intensive techniques are *import-light*, i.e., they require simpler tools and implements which need not be imported from abroad, and thus there is considerable saving in foreign exchange.

(5) Labour-intensive techniques are indispensable for counteracting *inflationary* pressures in a developing economy. They quickly increase the supply of consumable goods and thus obviate the danger of inflation.

(6) The use of labour-intensive techniques is usually found in the villages and small towns. This would obviate the necessity of building houses and other social works for the workers. This would mean considerable saving in the community's expenditure on social overheads in the initial stages of development which could be utilized on more important projects.

(7) Moreover, labour-intensive methods, being spread out into villages and small towns, enjoy all the advantages of decentralization and avoid the evils of the factory system.

(8) The emergence of monopolies and concentration of economic power in the hands of a few is also avoided.

Arguments for Capital-Intensive Techniques. It has been strongly argued that those investment projects should be chosen which are capital-intensive rather than labour-intensive. According to Galenson and Leibenstein, "Successful economic development... particularly in the face of gross backwardness, hinges largely upon the introduction of modern technology upon as large a scale as possible." The grounds on which this argument is based are:

(1) Enterprises using capital-intensive techniques lead to a large share of the resulting income going to entrepreneurs and a smaller share going to wage earners. Since the propensity to save is higher on the part of entrepreneurs, savings increase and a larger proportion of them are utilized for investment. Thus the rate of economic growth is accelerated.

(2) As a corollary to this, we can say that since the growth rate is much faster under capital-intensive techniques than under labour-intensive techniques, more employment will be offered to the labour force in the long run.

(3) In the majority of underdeveloped countries the growth rate of population is very high and unless capital-labour ratio is raised, output per head will not increase. This will tend to dampen the rate of capital accumulation. So the use of capital-intensive techniques is indispensable for increasing the tempo of development.

(4) Further, capital poor countries can ill afford to waste capital though obsolescent and depreciation. Underdeveloped countries should, therefore, choose highly capital-intensive production techniques that do not become obsolete soon. Thus a small production of capital goods is required to be replaced in the future and more capital is available for further capital formation.

(5) Capital-intensive processes of production are more profitable than labour-intensive techniques because under the former productivity rises more rapidly in relation to costs. This is due to the economies of large scale production enjoyed by them.

(6) In reality, the use of highly capital-intensive techniques leads to the production of quality products and lowering of costs. Low costs mean low-prices and provide the basis for a rapid rise in living standards later on. Professor Hirschman opines: "The firm requirement of high standards of quality is an element in favour of, rather than, as would usually be believed, against the introduction of this type of production into underdeveloped countries."¹⁹

(7) Capital-intensive techniques have far-reaching effect on the process of economic growth. A few capital-intensive projects have a greater total impact on the economy than a number of labour-intensive projects. As Hirschman points out: "When a government undertakes the construction of a large hydro-electric station or of a steel mill, it cannot afford to let such ventures go wrong, it places itself under a far stronger compulsion to deliver than if it were to spend the same funds on a large number of projects.

(8) Hirschman further argues that capital-intensive techniques are bound to enhance skills and efficiency and assist in training management

¹⁹A.O. Hirschman op. cit., p. 144

"in the performance of new unfamiliar and perhaps somewhat uncongenial tasks." Thus capital-intensive techniques possess the twin-property of 'efficiency enhancing and coordination-promoting'.

(9) For providing economic and social overheads large capital investments are essential in underdeveloped countries.

Conclusion. We have studied both sides of the problem and it is rather difficult to decide as to which technique should be adopted in an underdeveloped country. In fact, the two approaches are not altogether different from each other. The use of labour-intensive techniques tends to increase production and employment in the economy. On the other hand, the adoption of capital-intensive techniques tends to accelerate the rate of capital formation and then to maximize productive capacity and employment in the long run. But in making a choice between labour- and capital-intensive techniques in the context of an underdeveloped country, it is necessary to consider a variety of factors: their comparative cost of production; effects on employment, income, saving, and investment over different time periods; use of domestic resources; effect on domestic and foreign demand; their ability to ease inflationary pressures; and balance of payments position. The cost of production of goods manufactured with labour-intensive methods is higher than that with capital-intensive techniques because of the inability of the former to realize economies of scale. But this fact should not deter the planners from deciding upon labour-intensive techniques which economise on the use of scarce capital resources. Such methods of production create large employment opportunities and help in increasing the supply of consumer goods, obviate the necessity of importing raw materials, food and capital goods from abroad. Thus they tend to check inflationary tendencies and balance of payments difficulties inherent in the development process. But there is a snag. Use of labour-intensive techniques cannot step up the rate of capital accumulation as fast as that of capital-intensive techniques. No doubt, labour-intensive methods create more employment and thereby raise income levels, but of those whose incomes are low and propensity to consume is high. So a smaller proportion of the incomes generated is available for saving and reinvestment. But keeping in view the larger interest of the masses, labour-intensive techniques should be used in the consumer goods sector. For a "continuing and compounding effect" on the rate of growth of income, capital-intensive techniques should be confined to the capital goods sector.

Chapter 60

INVESTMENT CRITERIA IN ECONOMIC DEVELOPMENT

INTRODUCTION

The problem of investment criteria involves the principles underlying the allocation of scarce investment resources in a rational manner so as to maximise the national income in an underdeveloped economy. It is a commonly known fact that private enterprise in such economies is motivated by profit maximisation. Very often private investment decisions are for projects that are not conducive to economic development. It is, therefore, felt that only a public authority can make decisions to allocate scarce investment resources and to influence the direction of private investment towards development-oriented projects. For this, the choice before the public authorities is between techniques of a higher or lower capital intensity. Towards this end, economists have propounded a number of investment criteria which are discussed below.

The Capital-Turnover Criterion

The capital turnover criterion is known by various names viz., the rate of turnover criterion, the maximisation of output per unit of capital criterion or the ratio of output to capital criterion (minimum capital intensity or minimum capital-output ratio criterion). This criterion is attributed to J.J. Polak and N.S. Buchanan.² The logic involved is that since capital is scarce in underdeveloped countries, that technique should be chosen which yields the maximum output per unit of capital employed. In other words, for maximising output, investment projects with a high rate of capital turnover (*i.e.*, of a low capital output ratio) should be selected. Quick-yielding projects with a low capital intensity make it possible for scarce capital resources to be realized soon enough for reinvestment into other projects. Such projects also provide

¹This appeared as an article in a slightly modified form in AICC Economic Review, January 1969. Published with the kind permission of the Editor

²J.J. Polak, "Balance of Payments Problems of Countries Reconstructing with the help of Foreign Loans" *Quarterly Journal of Economics*, February 1943 and N.S. Buchanan, *International and Domestic Welfare*, N. York, 1945.

maximum employment per resource in underdeveloped countries. Here the capital employment absorption criterion merges into the capital turnover criterion.³ This criterion is particularly useful, according to Chenery, in choosing among projects within a given sector.

Its Limitations. There are, however, certain limitations of this criterion. First, it ignores the element of time. Quick-yielding projects having a low capital-output ratio in the short run may have a high ratio in the long run.⁴ Secondly, this criterion ignores the supplementary benefits flowing from an investment project. It is possible that projects with a high capital-output ratio may confer certain supplementary benefits on the economy thereby outweighing extra costs involved in them. On this count, notes a UN Study, a project with a high capital-output ratio should not necessarily be accorded a lower priority.⁵ Thirdly, in certain industries like agriculture, a low capital-output ratio may appear outwardly. If working capital like fertilisers is also included in the fixed capital investment, the ratio may in fact be high. Fourthly, the higher the rate of turnover, the higher may be the rate of depreciation of capital and rate of output may not be high. Therefore, Dr K.N. Prasad suggests the net rate of turnover criterion instead.⁶ Fifthly, the maximisation of employment argument implied in this concept may hold good only in the short run. A capital-intensive project may absorb little labour to start with, but may maximise the amount of labour per unit of investment in the long run. Sixthly, it does not necessarily follow that with increased employment there will be an addition to total output. Labour-intensive and capital-saving investments may keep productivity of labour low as usual, without making any addition to total output. Seventhly, the use of labour-intensive techniques may even reduce output thus necessitating a greater use of capital thereby raising the capital-output ratio. Lastly, such techniques often produce sub-standard products. Such products are often subsidised by the government and entail high social costs. For example, the production of cotton textiles with handlooms.

Conclusion. The capital turnover criterion is thus circumscribed by a number of factors. No doubt common sense demands that in the face of abundant labour and scarce capital in underdeveloped economies projects of a low capital intensity should be undertaken but the

³Nurkse's doctrine of Concealed Saving Potential is a variant of the Capital Absorption Criterion, R. Nurkse, *Problems of Capital Formation in Underdeveloped Countries*, Ch. II.

⁴Merits of a high capital-output ratio are discussed in detail above.

⁵UN, *Economic Bulletin for Asia and Far East*, June, 1961, pp. 30-33.

⁶K.N. Prasad, *Technological Choice Under Development Planning*, 1963.

undeniable fact remains that for building up the socio-economic infrastructure and for accelerating the rate of economic development, project with a high capital intensity are also a must. India has been judiciously following this dual investment policy in her plans for economic development.

The Social Marginal Productivity Criterion

The social marginal productivity (SMP) criterion was first put forward by A.E. Kahn and later Hollis B. Chenery⁷ improved upon it. It is based on the conventional marginal productivity approach. As more and more capital is employed in any project in combination with given amounts of other inputs, its marginal product will after a time start falling till the marginal productivity of capital in different uses is equalised. The aim is to allocate limited investment resources in such a way as to maximise the national output. In other words, they should be utilised in the most productive projects. Kahn states that this criterion takes "into account the total net contribution of the marginal unit to national product and not merely that portion of contribution (or of its costs) which may accrue to the private investor." Thus it is applicable to the economy as a whole and not to individual investment projects.

Chenery evolves a formula for the quantitative measurement of the SMP concept. He ranks investment projects according to their social value and studies their effects on national income, balance of payments and the cost of domestic and imported materials used therein. The selection of projects depends on their rank, and their number on their cost and funds at the disposal.

Taking the balance of payments to be in equilibrium, the Chenery equation is:

$$\text{SMP} = \frac{X+E-L-M-O}{K}$$

where X represents increased market value of the output, E the added value of output due to external net economies, L cost of labour, M cost of materials, O overhead costs including depreciation, and K is capital funds invested. The equation can be simplified as $(V-C)/K$ where V the social value added domestically equals $(X+E)$ and C the total cost of factors equals $(L+M+O)$.

Since in underdeveloped countries foreign exchange is more valuable than domestic currency, there is a large difference between the actual

⁷A. E. Kahn, "Investment Criteria in Development Programmes," *Quarterly Journal of Economics*, February, 1951, pp. 38-61 and Chenery, "The Application of Investment Criteria," *Quarterly Journal of Economics*, February, 1963, pp. 76-96.

and official value of the foreign currency in terms of the local currency. Chenery represents this difference by r . A zero r means equilibrium in the balance of payments, a positive r represents a surplus and a negative r , a deficit in the balance of payments of the country. Accordingly, the refined formulation is:

$$SMP = \frac{V - C}{K} + \frac{r(aB_1 + B_2)}{K}$$

The other elements being the same, aB_1 is the annual authorised impact on the balance of payments of servicing initial borrowings from abroad and B_2 the annual effect of the project's operation on the balance of payments. If B is negative, it means an import and if it is positive it is an export. To simplify the formula still further $r(aB_1 + B_2)$ is represented by Br , the combined balance of payments effect and the final formula is:

$$SMP = \frac{V - C}{K} + \frac{Br}{K}$$

With the help of this formula Chenery has calculated the SMP of a number of investment projects in Italy and Greece. According to him, the use of this formula in full may help in improving upon the method of using funds in a piecemeal manner on major projects.

Its Limitations. Despite this, the practical usefulness of the SMP criterion is limited due to a number of considerations.

First, it is not correct to say that the marginal productivity of capital is exactly equal in all uses. It can be at the most nearly equal, for investment may be either too large or too small due to technical reasons.

Secondly, marginal productivity of capital in the case of different projects is equalised on the basis of a particular technology which may not necessitate the reallocation of investible funds. But it might be useful to devote larger doses of capital to particular projects if it leads to the use of a better technology.

Thirdly, the SMP criterion considers only the effects of the present. Factor productivity in different uses depends on the relationship between costs and prices of the products produced and these in turn depend upon supply and demand conditions. In the short run, resources are adjusted to prevailing supply and demand conditions, while in the long run they are themselves influenced by present investments. Similarly, cost conditions may also be changed over time with the acquisition of more knowledge, skill and experience by entrepreneur and workers. Thus, it is difficult to calculate the productivity of resources when the time period is long.

Fourthly, the SMP criterion is vague and indefinite. For it is difficult to have a correct assessment of the benefits and costs of different

projects both in the present and future. Market prices are not a correct guide to resource allocation. There is wide disparity in underdeveloped countries between the equilibrium and the market rates of interest, wages and foreign exchange. Likewise the benefits accruing from social investments like education and public health services can at best be assigned arbitrary monetary valuations. There are also idle resources like the underemployed and the unemployed manpower whose market value is not capable of measurement. Chenery himself admits that such imperfections in the market forces will "greatly reduce the social value of investment unless an attempt is made to offset them." Therefore, to facilitate the calculation of social values in these and other cases, Chenery, Frisch and Tinbergen have suggested the use of "shadow" or "accounting" prices reflecting the intrinsic values of products and factors. Corresponding to the concept of shadow prices is the concept of "shadow cost" which is used to calculate the costs of a particular project to society. An ILO study suggests that these shadow prices and costs and not the market prices and costs, if any, should be used in ranking investment projects and determining which are worth undertaking and which are not.⁸

Finally, one of the major defects of the SMP criterion is that it is concerned with once-for-all effect of investment on the national income and neglects the multiplier effect of present investment on future income. Moreover, it does not consider the indirect effect of the present investment on population, saving and consumption in the future.⁹ It is possible that the present investment may increase the national income but may make the distribution of income unequal. Similarly, investment in some projects may raise the per capita consumption in the present as compared with other projects which may raise it over the long period. Therefore, the SMP criterion is at best a value concept.

The Reinvestment Criterion

The reinvestment criterion is advanced by Galenson and Leibenstein.¹⁰ It is also known as the rate of surplus criterion or the marginal per capita investment quotient. The latter is defined as the "net productivity per worker minus consumption per worker." Galenson and Leibenstein

⁸"Some Aspects of Investment Policy in Underdeveloped Countries," *International Labour Review*, May 1958.

⁹UN, *Economic Bulletin for Asia and Far East*, June 1961, op. cit.

¹⁰W. Galenson and H. Leibenstein, "Investment Criteria, Productivity and Economic Development," *Quarterly Journal of Economics*, August 1955, pp. 342-70. Also H. Leibenstein, *Economic Backwardness and Economic Development*, Ch. XV and comments by H. Neissen, J. Moses and A. Hirschman in November 1965, February 1957 and August 1968 issues respectively of the *Quarterly Journal of Economics*.

emphasize the maximisation of per capita output in the future rather than in the present. This is possible when the rate of savings is maximised leading to the reinvestment of income. Assuming that national income is divided into wages and profits, the former are spent on consumption and the latter are saved for the purpose of investment. The larger the volume of profits, the higher will be rate of savings, as a result the larger will be the amount of capital available per head and the higher will be the growth rate of output which will lead to increased output per head in the future. In the early phase of development a "critical minimum effort" is required on the part of underdeveloped countries to increase the proportion of profits to national income and to restrict consumption per head. This would lead to larger savings and larger reinvestible surplus. Given the quality and quantity of labour force, it is the capital-labour ratio that determines per capita output. Galenson and Leibenstein use the following formula to determine the rate of investible surplus (r)

$$r = \frac{p - e.w.}{c}$$

where p is the product per machine, e the number of men per machine, w real wage rate, and c the cost of machine, r can be increased by raising p and depressing $e.w.$ in proportion to c .

In order to raise the proportion of capital to labour, the per capita output potential and the per capita investible surplus, Galenson and Leibenstein favour capital-intensive techniques even in those countries where capital is scarce and labour abundant.

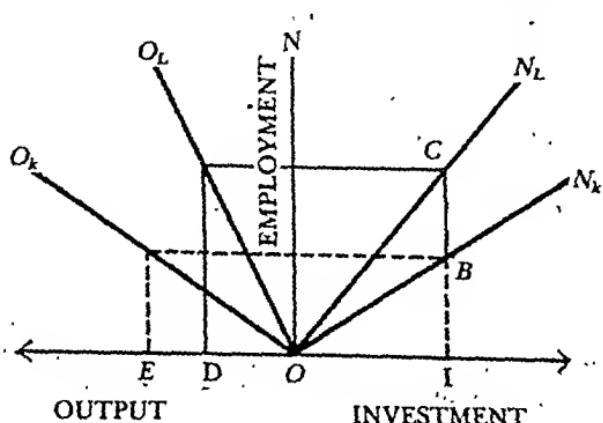


FIG. 60.1

Production processes having a high ratio of capital to labour result in a large share of income going into profits and a small share into wages. Thus a large proportion of the initial income is available for investment through profits.

The larger the profits, the higher will be the savings. As a result, more capital will be available for investment and the greater will be the increase in output. This is illustrated in Figure 60.1 where in the north-east quadrant the relationship between new investment and

resulting changes in employment N is represented. N_K shows this relationship when a capital intensive technique is used, and N_L when a labour-intensive technique is used. The north-west quadrant represents the relationship between employment and output. O_K shows this relationship with a capital-intensive technique, and O_L when a labor-intensive technique is used. Assuming the same amount of new investment O_I , the capital-intensive technique creates IB employment while the labour-intensive technique creates IC employment. But the labour-intensive technique creates only OD output while the capital-intensive technique creates larger output OE . Thus the capital-intensive technique creates less employment but more output while the labour-intensive technique creates more employment but less output.

Urbanisation following industrialization through the establishment of capital-intensive industries will affect a number of other social and economic factors including population growth. Further, capital-intensive production processes imply a long life of capital goods. Therefore, a smaller proportion of the gross investment resources will be required for replacement of worn out capital goods and a larger proportion is available for future capital formation. Another important argument in favour of such techniques is that though they absorb less labour in the short run, yet they are capable of absorbing more labour in the future as the growth rate will be faster in the long run.

Its Criticism. There are, however, certain objections to this criterion.

First, the reinvestment quotient is based on the assumption that consumption remains constant overtime. But this is untenable. For as pointed by A.K. Sen, with additional employment the total consumption of the community is likely to increase and unless the increase in output as a result of additional employment is greater than the increase in consumption resulting from it, the volume of investible surplus will fall. This will adversely effect the growth rate of the economy.¹¹

Secondly, this criterion rests on the assumption that whatever is received as wages is spent on consumption and whatever is not paid to labour is reinvested. In fact, there are likely to be leakages in the wage-stream and profit-stream flowing into consumption and investment channels respectively. With the increase in real total output, workers might feel better off than before even at the same wage rate and may save something. The doctrine makes no allowance for capital depreciation either, which is sure to reduce the reinvestible surplus. Thus, the authors fail to discuss the problems which may ensure wages to be spent exclusively on consumption and thereafter the surplus to be

¹¹A.K. Sen, "Some Notes on the Choice of Capital Intensity in Development Planning," *Quarterly Journal of Economics*, November 1967.

reinvested.

Thirdly, it goes against the principle of marginal productivity of capital. As the amount of capital is increased in successive doses after point its productivity starts declining. This implies a fall in output per capita and in the reinvestment quotient.

Fourthly, the contention that highly capital-intensive processes have large reinvestment potential does not appear to be correct. A highly capital-intensive industry like the iron and steel will not yield output until several years have elapsed. On the other hand, modern small enterprises possess a high reinvestment coefficient and thus use more capital and more labour per unit of output than large factories.¹²

Fifthly, the concentration upon large scale capital-intensive industries is beset with a number of practical difficulties in underdeveloped countries. Due to lack of skilled labour and entrepreneurial ability, the efficient management of large undertakings is difficult. Further, due to the non-availability of sufficient capital for small enterprises, consumer goods industries are unable to develop, thereby leading to inflationary pressures in the economy.

Sixthly, the investment criterion is lopsided, for it does not study the effect of balance of payments on investment. In an underdeveloped economy there is an acute scarcity of capital goods which have to be imported and they worsen the already tight balance of payments position.

Seventhly, Otto Eckstein is of the view that instead of depending on the reinvestment criterion for planned investment, it may be better to use fiscal measures to attain an income distribution which will yield sufficient savings for the purpose of investment.

Eighthly, the reinvestment criterion neglects the importance of consumption, rather it advocates its curtailment. But current consumption may be more important than future consumption and the reinvestible surplus may have to be cut down in the interest of the community.¹³ Neglecting the consumer goods sector in favour of the capital goods sector is wrought with serious consequences both for the economy and for the state. It is bound to lead to scarcity of essential commodities and to inflation and social unrest in an underdeveloped economy wedded to democracy.

Ninthly, the use of the reinvestment criterion perpetuates the problem of unequal distribution of income in such economies. There is a greater degree of unequal distribution of income between the wage

¹²P.N. Dhar and H.F. Lydall, *op. cit.*

¹³O. Eckstein, "Investment Criteria for Economic Development and the Theory of Intertemporal Welfare Economics", *Quarterly Journal of Economics*, February 1957.

carriers and the capitalists and between those who obtain immediate employment and those who are left unabsorbed.¹⁴ Lastly, this criterion does not reckon those cases of development planning in which the present income is valued more than the future income for facilitating the expansion of the capital goods sector and in which a lower growth rate but a higher rate of income in the immediate future is to be preferred.¹⁵

Conclusion. Despite these limitations, the reinvestment criterion is useful as a first approximation towards accelerating the rate of income growth in an underdeveloped economy. It is more realistic than the social marginal productivity criterion, for it takes into consideration the effects of population growth on the rate of investment in the future.

The Time Series Criterion

A.K. Sen has put forward the "time series" criterion.¹⁶ The criterion seeks to maximise output within a given period of time. Given the time-horizon, Suppose that there are two projects *H* (capital-intensive) and *L* (labour-intensive) and time horizon in ten years, at the end of which total returns in each case are 100 million. This is shown in Table 60.1.

TABLE 60.1

Period (in years)	Project I		Project II	
	(Capital-Intensive) <i>H</i>	(Returns in millions)	(Labour-Intensive) <i>L</i>	(Returns in millions)
1	4.0		6.0	
2	5.0		7.0	
3	6.0		8.0	
4	7.5		9.0	(b)
5	9.0		10.0	
6	10.5		11.0	
7	12.0		11.5	
8	13.5		12.0	
9	15.0	(a)	12.5	
10	17.5		13.0	
		100.0		100.0

(a) excess over *L* 58.0-49.0=9.0

(b) excess over *H* 51.0-42.0=9.0

¹⁴H. Myint, *The Economics of Developing Countries*, 1967, p. 139.

¹⁵K.N. Prasad, *op. cit.*

¹⁶A.K. Sen, "Some Notes on the Choice of Capital Intensity in Development Planning," *Quarterly Journal of Economics*, November 1967. Also *Industrial Techniques*, Chs. II, V, VII and VIII.

The returns of the *H* project are less (42 million) in comparison to those of the project *L* (51 million) over the first six years while in the remaining four years the returns of the *H* project rise more than that of the *L* project. The returns rise from 42 m to 58 m in the case of project

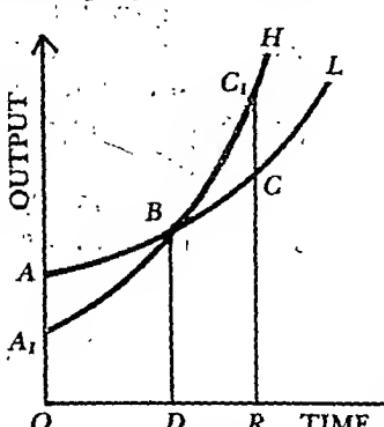


FIG. 60.2

H and fall from 51 m to 49 m in project *L*. Since the total returns are the same (i.e., 100 million) from both the projects, the overall position is one of indifference. The important point is as to whether the initial loss in output by adopting a capital-intensive project is recovered within the time period of ten years or not. The time taken by the capital-intensive technique to overcome its initial deficiency in output over the labour-intensive technique is called by Sen "the period of recovery". This is explained with the help of the diagram above reproduced from Sen.

[*H* and *L* curves show the flow of real output during

a given time horizon with the two techniques. Techniques *H* (see Table 60.1) gives lower output in the beginning but a higher rate of growth than technique *L*. Up to the time period *D*, technique *L* gives more output over technique *H*. At the point of time *R*, technique *H* makes up this deficiency when it give *CBC₁* more output over technique *L*. The period *OR* is the period of recovery which makes the area *ABA₁* = *CBC₁* area].

Thus for any pair of techniques a period of recovery can be found out. In choosing between the techniques the period of recovery should be compared with the period we are ready to take into account. If it is found that the period of recovery is longer, that is, if within the time-horizon, the loss in output, by adopting technique *H* is not recovered by the excess of output we should choose technique *L*. If reverse is the case, technique *H* may be chosen. To the extent real wages are within control and the taxation system is capable of providing any rate of saving, the quantitative importance of the conflict between the maximisation of immediate output and the future growth rate is less. But so long as there is some conflict between the present and future, the choice will depend on the time discounted use. To say, therefore, according to Professor Sen, "that over-populated countries should always prefer labour-intensive methods conceals an implicit preference for present over future, and represents a very short planning horizon. On the longer planning horizon, the more we calculate the future rate of growth over the present level of consumption and employment, the more we should favour capital intensive methods which are capable of yielding a larger surplus of output over wage costs for a given capital outlay and so make possible a higher rate of reinvestment for the future."

This criterion by taking into consideration the element of time for determining production techniques in an underdeveloped economy becomes more realistic than the other criteria discussed above.

Its Limitations. But Sen himself points out *three* limitations of his concept.

First, the taking up of a particular time-horizon, say of ten years, is arbitrary.

Secondly, it is not possible to derive the time series for all times to come. Therefore, the planning period has to be definitely fixed. But this creates some serious problems. When the time limit is about to end, labour-intensive technique might be selected in order to inflate the quality of output and thus capital formation is neglected. As a result, investment will fructify after the time limit and it might not be possible to compensate for the depreciation of machinery.

Thirdly, factors like technological change, wage rate, propensity to consume, etc., on which the study of time series depends may all be changing and make the forecasting of future investment and output not only difficult but also erroneous.

Lastly, Professor Prasad is, however, of the view that there is nothing novel about this criterion. If the period of recovery is very short, this criterion in practice becomes the net rate of turnover criterion and if the period of recovery is very long, it corresponds to the reinvestment criterion. In the end we are left with the question, what criterion is there for the choice of a time period?"¹⁷

Conclusion

The various investment criteria discussed above are not different in their ultimate objective, that of the maximisation of national output. Only the approach routes differ. The different components of national income (consumption, saving and investment) are used by economists to maximise the total output by giving more or less importance to one or the other. Some investment criteria aim at maximising total output at a point of time while others over a period of time. But all criteria are incomplete because they neglect the influence of such factors as population growth, tastes, technical progress, market conditions, distribution of income, price changes, balance of payments and social and cultural conditions on the level of investment in one way or the other. Contrariwise, they also fail to study the impact of investment on these factors. Even the use of input-output technique and the concept of shadow prices and costs have failed to solve this problem satisfactorily. But despite

¹⁷K.N. Prasad, op. cit.

these apparent theoretical and practical limitations, the various investment criteria are being increasingly made use of in the programming of resource allocation in almost all the developing countries of world including India. It is, however, essential that they must be in keeping with the social and economic objectives of the developing country.

Chapter 61

ECONOMIC PLANNING AND PRICE MECHANISM

INTRODUCTION

The price mechanism¹ is a system of economic organisation in which each individual in his capacity as a consumer, producer and resource owner is engaged in economic activity with a large measure of freedom. It is related to a free market economy where the factors of production are privately owned. Individuals are free to choose any occupation, to buy and sell goods and services from anyone and to any one based on mutual benefit at prices determined by market forces. Ultimately the price mechanism leads to the maximization of efficiency and output through the equilibrating forces of demand and supply for goods and services. But the analysis of the price mechanism is based on certain restrictive assumptions: the existence of perfect competition of the product and factor markets; perfect knowledge about present and future price and non-price, variables; the prevalence of constant returns to scale; the absence of external economies; perfect divisibility of capital; no changes in population and in the tastes, habits and fashions of consumers, and the maximization of profits by producers. Our main task is to find out the relevance of the price mechanism in the context of economic planning.

Price Mechanism In a Planned Economy

The price mechanism is a distinguishing feature of a free market economy and hence it is contended that the price mechanism has little relevance in a planned economy. Under economic planning the various elements of the price mechanism—costs, prices and profits—are all planned and calculated by the planning authority in accordance with the targets of the plan. Thus in a planned economy rational economic calculation is impossible because unlike a free market economy the price mechanism is regulated and controlled. The various assumptions under which the price system works do not hold good under planning. This matter had been hotly debated from the beginning of the twentieth century. Professor Ludwig von Mises was the first to declare that econo-

¹For a detailed study of the role of price mechanism refer to author's *A Textbook of Economic Theory*, Ch. 5.

planning was doomed to failure in the absence of a free market mechanism. He was supported by Hayek and Robbins who held that to assign rational valuations to the means of production without private property might be logically conceivable, but it was practically impossible. Professor Robbins wrote: "On paper we can conceive this problem to be solved by a series of mathematical calculations. But in practice it is quite unworkable. It would necessitate the drawing up of millions of statistical tables based on many more millions of individual computations. By the time equations were solved, the information on which they were based would have become obsolete and they would need to be calculated again." Thus the price mechanism would be a farce under economic planning.

On the other hand, Taylor, Lerner, Lange and many others have shown the working of the price mechanism under economic planning. According to Oskar Lange, "The actual capitalist system is not one of perfect competition, it is one where oligopoly and monopolistic competition, prevail. This adds a much more powerful argument to the economists for *economic planning*,"² and the price mechanism can be changed to meet requirements of the national plan. He points out that Mises' failure to recognise a rational system under economic planning stems from his confusion regarding the true nature of prices in a socialist society. Prices may be determined by independent buyers and sellers or they may be "an index of terms on which alternatives are offered". Mises errors in assuming that prices can be determined only in the former sense.

Lange, therefore, does not agree that in the absence of a competitive market there is no practical method of discovering the right prices. He agrees with Taylor and asserts that the method of 'trial and error' for determining accounting prices under a planned economy would need the solution of only those equations which relate to the consumers and the managers of production. The rational allocation of resources under economic planning in the light of a competitive market requires the satisfaction of three conditions of equilibrium. *First*, each producer and consumer must adjust his selling and buying in such a manner that he cannot add to either his income or his satisfactions. This is the "subjective condition" of equilibrium. *Secondly*, each price must be such that the total supply and demand for each commodity are equal. This is the "objective condition" of equilibrium. *Thirdly*, the incomes of consumers must equal their receipts from selling productive services plus profits. These three conditions are fulfilled by the "parametric function of prices" whereby each individual tries to adjust himself to the

²*On the Economic Theory of Socialism*. Italics mine.

actual market price through the process of trial and error. "The process of trial and error goes on until the objective condition of equilibrium is satisfied and equilibrium finally reached. Actually, it is historically given prices which serve as a basis for the process of successive trial." For the satisfaction of these subjective and objective conditions in a planned economy, the planning authority should lay down two rules for the guidance of plant managers: (i) each manager should combine productive goods and services in such a manner that the average cost of producing a given output is the minimum; and (ii) each manager should choose that scale of output which equalises marginal cost to prices. In a planned economy raw materials, machines and other inputs are sold by public enterprises at prices which are equal to their marginal cost of production. So pricing in a planned economy is based on marginal-cost pricing like that in a capitalist economy. If the price or marginal cost of commodity is above the average cost of production, the plant managers will earn profits, and if it is below the average cost of production they will incur losses. In the former case, the industry would expand and in the latter case the industry would cut down production, and ultimately a position of equilibrium would be reached where price equals both average and marginal cost of production. Thus as pointed out by Lange, "The rules of consistency of decisions and of efficiency in carrying them out are in socialist economy exactly the same as those that govern the actual behaviour of entrepreneurs on a purely competitive market."

But how can the planning authority find out the equilibrium market and accounting prices? Starting from historically given prices, it can instruct the plant managers to regard them as correct prices. If they are wrong, surpluses or shortages will emerge. Prices will be readjusted accordingly. This process will continue till the equilibrium position is reached. This leads to the rational allocation of resources and this is how price mechanism operates under economic planning. According to Lange, "This trial and error procedure would or at least could, work much better in a socialist economy than in a competitive market. For the Central Planning Board has a much wider knowledge of what is going on in the whole economic system than any private entrepreneur can ever have, and consequently, may be able to reach the right equilibrium prices by a much shorter series by successive trials than a competitive market actually does."

Thus it is wrong to say that the price mechanism has no relevance in a planned economy. Rather, it works better in a planned economy than in a capitalist economy. The former is able to minimize the malallocation and wastage of resources associated with the working of the price mechanism under the latter. The planning authority being better equipped in locating mistakes, price-output fluctuations and in rectify-

ing them, the economy is able to secure optimum utilisation and production of resources. Moreover, a planned economy brings about an optimum income distribution in the society. The price mechanism helps in achieving all this under economic planning in two ways. *First*, it serves as a basis of accounting—a means to evaluate and compare cost of production and output based on accounting prices and costs. *Secondly*, it acts as an incentive to the people to do things in accordance with plan targets. Thus the role of the price mechanism in economic planning lies in assuring the maximum productive efficiency of the economy through proper cost accounting and in providing sufficient incentives to the people.

Price Mechanism in an Underdeveloped Economy

The price mechanism being closely associated with free market developed economies does not work properly in underdeveloped economies. There is little dispute over this. But economists differ over the role of the price mechanism under development planning. There is the view that the price mechanism should be allowed to operate in the interests of efficient resources allocation and for providing incentives to the people. The majority view holds that the price system is ineffective, unreliable and irrelevant for the solution of the complex problems faced by underdeveloped countries. The state should, therefore, assume control over the market system and change it in accordance with the targets of the national plan. It should use development planning to improve and strengthen the market mechanism rather than supplant it with overall controls.

According to the *first* view, a properly functioning market system tends to stimulate both economic efficiency and economic growth in various ways. The availability of variety of goods through the market stimulates the consumer to work harder in order to increase his income. The market system provides an incentive to entrepreneurs to innovate and invent to bring about technological improvements. Thus it leads to the accumulation of both human and physical capital. People acquire the critical skills in order to earn a higher reward and accumulate physical capital to earn higher profits. Besides, the price mechanism does all this automatically without requiring much of administrative interference. As an administrative instrument it is relatively cheap to operate in comparison with the costs and difficulties of controls under planning.

Economists are, however, sceptical about the reliance on the price mechanism to stimulate rapid economic development in underdeveloped countries. The price mechanism is in a rudimentary form in such economies. It is too weak to bring about the necessary changes required for rapid development. If such economies are left free to

market forces they may lead to wide fluctuations and keep them stagnant.

Investment decisions cannot, therefore, be left to the free working of the market forces. There are various reasons why the price mechanism does not function properly in underdeveloped countries. One of these is the inelastic supply of products. When the demand for a product increases, its supply is unresponsive. The reasons are the small size of markets, the lack of the means of transport and communications, the lack of capital, intermediate goods and personnel with entrepreneurial, managerial and labour skills. Moreover, a decrease in price does not induce increases in demand for a given product because of the low level of income. Under the circumstances, producers in underdeveloped countries know that even if they try to produce more at a price which seems attractive, they will saturate the market, the price will fall and they will lose. Thus the price mechanism performs poorly in such economies due to the lack of social and economic overhead capital, intermediate goods and the small size of markets.

Second, the price mechanism works imperfectly because of the ignorance and unfamiliarity with market mechanism in such economies. A large part of the economy comprises the non-monetised sector where people are engaged in barter trade. They are not aware of the working of the market system. As a result, the price mechanism is not able to bring about an efficient resources allocation. Further, certain institutional factors are responsible for bringing about price distortions and retard the smooth operation of the price mechanism. The product, factor, money and capital market are not organised properly. Mostly peasants produce for subsistence and even when the marketable surplus is available it cannot be sold at remunerative prices due to the lack of market organisation and intelligence. Trade in agricultural products is concentrated into the hands of a few intermediaries which is more akin to monopoly rather than perfect competition. In the factor market, wages are much lower in the non-organised agricultural sector while they are even higher than the opportunity cost of labour in the industrial sector where labour is organised in strong unions. Labour in these two categories assumes the nature of non-competing groups because the former is unskilled and the latter is skilled. In the money market, the market rate of interest is much higher than the bank rate. Rather, it varies over a wide range. It is very high in the rural sector where sufficient credit facilities are not available and the farmers have to depend upon the moneylender who enjoys a sort of monopoly. Where credit facilities are provided by the government in certain cases to agriculturists and small businesses for specific purposes, the rate of interest is modest. The capital market is unorganised and scattered.

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dispense with the market system altogether as it is done in a centrally planned economy. Rather, development planning should improve and strengthen it in order to achieve the twin objects of the price mechanism under economic planning—to serve as a basis of accounting and to provide an incentive to the people. This can be achieved in a mixed economy where the government formulates the development plan and creates the necessary conditions for development. It provides political and monetary stability, and economic and social overheads. Data about the available resources and development potentialities of the economy are made known. The targets to be achieved during the plan period are laid down. The financial resources for the plan are estimated. The state carries out investment itself, directly manages resources for production and even controls prices of products and services. Last but not least, it facilitates, guides, controls and encourages private enterprises. A proper price mechanism is essential to calculate costs and prices of products and services and to provide incentives to both the public and private sectors of the economy. It is easy to invest in the required channels in the public sector in keeping with the plan targets and also to provide sufficient incentives. But to induce the private sector to invest and produce in accordance with the requirements of the plan, necessitates an appropriate price mechanism. Besides providing the necessary infrastructure in the form of social and economic overheads, the private sector may be given cheap credit facilities, rebates, subsidies, tax concessions. Moreover, divergences, if any, between social and private returns can be offset by appropriate tax resources and subsidies. But the perfection of the market system through such measures cannot lead to economic equality and rapid development simultaneously. A just income distribution must follow rapid growth because too much emphasis on the reduction of income inequalities will retard development.³ Lastly, it is difficult nay impossible to forecast price changes when the elasticities are low in underdeveloped countries. It is, therefore, necessary to decide how much to rely on prices and how far to assume that the price system is ineffective so that planning authority must ensure that the economy will produce what is demanded at whatever prices. If the price system works to an extent, investment can concentrate on the most profitable enterprises and except the trimming and balancing to be undertaken by the planning authority.⁴

Such a decision, however, depends on the stage of economic development through which an underdeveloped country is passing. If it is in the early phase of development, the price mechanism is of little

³H.G. Johnson, *Money, Trade and Economic Growth*, 1962.

⁴C.P. Kindleberger, *op. cit.*, Italicized.

which makes the transference of funds to productive channels difficult. Thus, due to the distortions of the product, factor, money and capital markets the price mechanism does not operate properly in underdeveloped countries.

Again underdeveloped countries are not free market economies. Here the government intervention is inevitable to push them off the dead centre of economic activity which obstructs the working of the price mechanism. The prices of products are controlled and regulated to adjust supplies to demand in order to avoid inflationary pressures. The government also fixes minimum wages in the case of sweated labour. Infant industries are provided protection through subsidies and import restrictions. So less efficient firms operate at higher costs and losses. Even consumers are required to pay higher prices due to import restrictions on commodities. Certain enterprises are run as public undertakings whose commodity prices are fixed by the state. So the state plays a major role in making the price mechanism inoperative in underdeveloped countries.

Besides the market system leads to the inequalities of income and wealth and the concentration of economic power in the hands of few people. There also arise divergences between social and private returns. Since the governments of underdeveloped countries aim at the reduction of inequalities of income and wealth, they put impediments on the working of the price mechanism.

The above factors lead to the obvious conclusion that the price mechanism itself cannot bring about an equilibrium between aggregate demand and aggregate supply. It is unable to overcome structural rigidities and break the vicious circles operating in the underdeveloped countries. And finally, individual investment decisions cannot be relied to mobilise and utilise efficiently the available resources for accelerated development of the economy. As aptly put by Professor Galbraith, "The market cannot reach forward to take great strides when these are called for. As it cannot put a man in space so it cannot bring quickly into existence a steel industry where there was little or no steel making capacity before. Nor can it quickly create an integrated industrial plant. Above all, no one can be certain that it will do so in countries where development has lagged and where there is not only a need for development but an urgent demand that it occur promptly. To trust to the market is to take an unacceptable risk that nothing or too little, will happen."

It is, therefore, contended that the market system should be controlled by deliberate state action in the form of economic planning to increase the rate of economic growth and to have an equitable distribution of income and wealth. There is, however, no need to

dispense with the market system altogether as it is done in a centrally planned economy. Rather, development planning should improve and strengthen it in order to achieve the twin objects of the price mechanism under economic planning—to serve as a basis of accounting and to provide an incentive to the people. This can be achieved in a mixed economy where the government formulates the development plan and creates the necessary conditions for development. It provides political and monetary stability, and economic and social overheads. Data about the available resources and development potentialities of the economy are made known. The targets to be achieved during the plan period are laid down. The financial resources for the plan are estimated. The state carries out investment itself, directly manages resources for production and even controls prices of products and services. Last but not least, it facilitates, guides, controls and encourages private enterprises. A proper price mechanism is essential to calculate costs and prices of products and services and to provide incentives to both the public and private sectors of the economy. It is easy to invest in the required channels in the public sector in keeping with the plan targets and also to provide sufficient incentives. But to induce the private sector to invest and produce in accordance with the requirements of the plan, necessitates an appropriate price mechanism. Besides providing the necessary infrastructure in the form of social and economic overheads, the private sector may be given cheap credit facilities, rebates, subsidies, tax concessions. Moreover, divergences, if any, between social and private returns can be offset by appropriate tax resources and subsidies. But the perfection of the market system through such measures cannot lead to economic equality and rapid development simultaneously. A just income distribution must follow rapid growth because too much emphasis on the reduction of income inequalities will retard development.³ Lastly, it is difficult nay impossible to forecast price changes when the elasticities are low in underdeveloped countries. It is, therefore, necessary to decide how much to rely on prices and how far to assume that the price system is ineffective so that planning authority must ensure that the economy will produce what is demanded at whatever prices. If the price system works to an extent, investment can concentrate on the most profitable enterprises and except the trimming and balancing to be undertaken by the planning authority.⁴

Such a decision, however, depends on the stage of economic development through which an underdeveloped country is passing. If it is in the early phase of development, the price mechanism is of little

³H.G. Johnson, *Money, Trade and Economic Growth*, 1962.

⁴C.P. Kindleberger, *op. cit.*, Italics mine.

importance. The main problem is to increase the productive capacity of the economy and to evolve an exchange economy by state action. This will mean 'deliberately distorting the price and cost differentials and holding on to these distortions (as in the case of an effective protectionist policy or a farm support programme to increase the food supply) instead of letting the prices and costs be distorted by random imperfections of the market and short run and speculative factors associated with inflation and balance of payments difficulties.' It implies strengthening the price mechanism where it is the weakest in the economy through economic planning. Ultimately, it is only when the economy has reached a higher stage of development that the price mechanism plays its dual role of providing highest efficiency through proper cost accounting and appropriate incentives under development planning. Thus "rational economic planning must aim at enlarging markets and utilising for its purposes the price formation that takes place in the markets which are thus expanded."⁵

⁵G. Myrdal, *Economic Theory and Underdeveloped Regions*, 1957.

PART SEVEN

PLANNING IN INDIA

Chapter 62

OBJECTIVES AND ACHIEVEMENTS OF INDIAN PLANNING

HISTORY

Planning as an instrument of economic development in India goes back to the year 1934 when Sri M. Visvesvaraya published his book *Planned Economy for India*. This was a bold and constructive blueprint for a ten-year programme of planned economic development of India. This pioneering work created keen interest in academic circles in the cult of planning. As a result, some more books appeared on the subject. They were Dr P.S. Loknathan's *Principles of Planning*, N.S. Subba Rao's *Some Aspects of Planning* and K.N. Sen's *Economic Reconstruction*.

In 1938, the first plan for India, when the National Planning Committee was interrupted due to the Second World War and the political disturbances following the resignation of the Congress ministries. It was only in 1948 that the committee could release a series of reports on planning in India.

In the next few years, eight leading industrialists of Bombay became convinced of the need for planning and took the initiative of preparing "A Plan of Economic Development for India". It was published in January 1944 and came to be known as the "Bombay Plan". It was a short-term plan for post-war reconstruction and reconstruction of the economy and a long-term plan for the economic development of the country. It was a plan for fifteen years, starting from 1944 figures during fifteen years.

In August 1944, the Government of India created the Planning and Development Department under the charge of Sir A. Dalal. The Department prepared a short-term plan for post-War reconstruction of the economy and a long-term plan for the economic development of the country.

Almost simultaneously with the Bombay Plan, the "People Plan" drafted by M.N. Roy on behalf of the Indian Federation of Labour was announced. It envisaged an outlay of Rs 15,000 crores in 10 years, and aimed at laying the greatest emphasis on the development of agriculture and consumer goods industries through the nationalization of all agricultural production and distribution. The People's Plan was thus fantastic and impracticable.

A plan of Gandhian principles was put forward by Principal S.N. Aggarwal of Wardha Commercial College. The Gandhian Plan was a modest one with an outlay of Rs 3,500 crores. It aimed at developing a decentralized self-sufficient agricultural society with emphasis on the development of cottage industries. It was essentially an idealist plan which neglected the development of basic and heavy industries.

In 1946, a Planning Advisory Board was set up by the Interim Government for a rapid review of the projects prepared by the various government departments and to report on them. The Board submitted its report in December 1946.

Immediately after independence, the All India Congress Committee appointed the Economic Programme Committee with Pandit Jawaharlal Nehru as the Chairman in November 1947. The AICC resolution stated: "Our aim should be to evolve an economic structure which will yield maximum production without the operation of private monopolies and concentration of wealth and which will create a proper balance between urban and rural economies. Such a social structure can provide an alternative to acquisitive economy of private capitalism and the regimentation of totalitarian state." This is how the idea of mixed economy came to be formulated in India's economic development. The Economic Programme Committee submitted its detailed proposals on 25 January 1948 and recommended the institution of a permanent planning commission.

On 6 April 1948 the First Industrial Policy of the National Government of India was announced, which outlined the future pattern of India's economic development. On 26 January 1950 the New Constitution of the Republic of India came into force, which enunciated the Directive Principles of State Policy—another milestone to be followed by the State for the economic rejuvenation of the country.

In March 1950, the Planning Commission was set up by the Government of India under the Chairmanship of Pandit Jawaharlal Nehru to prepare a Plan for the "most effective and balanced utilization of the country's resources." In July 1950, the Commission was asked to draw a six-year plan for the economic development of the country which was incorporated in the Colombo Plan. In July 1951, the Planning Commission issued the draft outline of the First Five-Year Plan for the

period April 1951 to March 1956. It was in December 1952, that the final version of India's First Five-Year Plan was presented to the Parliament by the Commission.

FIRST PLAN (APRIL 1951—MARCH 1956)

India's First Five-Year Plan was essentially a preparation for more rapid development in the future. It was prepared by the Planning Commission on a "rush order" basis. Even then it came up one and half years late from the date of its operation, i.e., April 1951, the Plan was presented to the nation in December 1952. The Planning Commission produced a "Modest Plan" under the prevailing conditions. The Plan was a means to integrate the various post-War reconstruction projects undertaken by the union and state governments and thus to repair the damage done to the economy by the Second World War and the Partition.

Objectives. According to the Planning Commission, the main objectives of the First Five-Year Plan were two-fold: (i) to correct disequilibrium in the economy caused by the War and the Partition, and (ii) to initiate a process of all-round balanced development of the economy for the future. There were, however, certain subsidiary objectives: (a) to raise productivity of food and raw materials; (b) to implement such schemes as would lead to the creation of economic overheads and increase employment opportunities, i.e., transport, irrigation and multipurpose river valley projects; (c) to expand social services on a wider scale; and (d) to provide for an efficient and adequate administrative machinery in all the states for carrying out development programmes in the country.

Outlay. Initially, the Plan envisaged an outlay of Rs 2,069 crores for the public sector, which was finally raised to Rs 2,378 crores. But the actual expenditure incurred did not exceed even the original estimate. It was Rs 1,960 crores. Priorities and pattern of the outlay in the public sector during the First Five-Year Plan are shown in Table 63.1 of Chapter 63. Total investment (public and private) during the Plan amounted to Rs 3,360 crores. 94 per cent of it came from domestic resources and 6 per cent from foreign sources.

A Critical Appraisal. The First Five-Year Plan sustained the hopes of the planners by achieving its objectives to a large extent. Domestic production increased and the economy was strengthened. National

was up by 10 per cent.

In the agricultural field, production of foodgrains rose by 20 per cent, of cotton by 45 per cent and of oilseeds by 8 per cent. The index number of agricultural production for all crops increased from 26 (1949-50 = 100) in 1950-51 to 117 in 1955-56.

Industrial production increased by 38 per cent. The overall installed power capacity rose from 2.3 million kilowatts. *Irrigation* facilities were extended to 16 million acres of land—10 million acres through smaller works and 6 million acres through major works. During the Plan period, work was accelerated on a number of multi-purpose river projects such as the Bhakra-Nangal, Damodar Valley and Hirakud, while many new major project were started on the Chambal, Rihand, Koyna and Kosi.

In the field of *transport and communications*, the progress was quite satisfactory. During the Plan period, 30 new main bridges were constructed, 636 miles of missing links were provided on national highways and 4,000 miles of existing roads were improved. In rail transport, 300 miles of new lines were laid and 430 miles of dismantled railway lines were repaired. Production of locomotives increased during the Plan period from 2 to 179, of coaches from 673 to 1,221 and that of wagons from 3,707 to 14,317.

A significant step undertaken during the Plan was the launching of the *Community Development* and National Extension Services programme on 2 October 1952. By the end of the Plan, this programme had been extended to 78 million persons in 1,40,000 villages. Another achievement in the social sphere was the introduction of tenancy reforms and the abolition of intermediaries in almost all the states.

Over the Plan period, money supply increased by a little over 10 per cent. But the *price level* came down by 13 per cent in 1955-56 as compared with 1950-51. The cost of living index also registered a decline.

The *balance of payments* position was more satisfactory than anticipated. In the original estimates an average annual deficit of Rs 180 to 220 crores was visualised. In actuality the deficit for the entire Plan period amounted to Rs 30 crores after taking credit for 'official donations' totalling to Rs 96 crores. As regards sterling balance, the actual withdrawal was Rs 138 crores against Rs 290 crores stipulated in the Plan.

To conclude with the Planning Commission, "First Five-Year Plan was instrumental in bringing about a marked improvement in the levels of production both in agriculture and industry. It also initiated a number of structural and institutional changes."¹

Despite all these achievements, the First Plan was simply a

¹GOI, *Review of the First Five-Year Plan*, p. 13.

transitional plan. It did not introduce fresh schemes and was an attempt to synchronise and coordinate the post-War development programmes. The targets laid down were very modest. Thus there was little difficulty in achieving these targets. Good monsoons made the situation all the more easy.

It was an *imperfect plan* which was prepared in haste without making a thorough assessment of the physical resources of the country. It was essentially a financial plan. But even in the financial field, shortfalls in expenditure occurred in almost all the heads. As already pointed out, there was a shortfall of Rs 418 crores between the estimated outlay and the actual outlay. Accordingly to the Planning Commission, these shortfalls were due to "the late commencement of the schemes and inadequate administrative and organisational arrangements for implementation." It was for the Commission to foresee these difficulties at the time of planning.

In the First Plan, no attempt was made to have annual breakdowns of the various targets of development. Due to the absence of annual 'control figures,' it became exceedingly difficult to assess the pace of development during the Plan period.

The First Five-Year Plan did not try to solve the unemployment problem. The chapter on employment in the Plan was half-hearted. By 1953 the unemployment situation became serious and the Planning Commission came up with the Eleven Point Programme and an additional outlay of Rs 309 crores for this purpose. But it was too late and the government could find jobs for only 4.5 million though the addition to the total labour force was 10 million. It was rather paradoxical for the economists that with the rise in national income, unemployment had also increased instead of falling.

One of the serious defects of the First Five-Year Plan was an utter neglect of the entire industrial field. It was something deliberate, for only 6 per cent of the total outlay was intended for large and small-scale industries. This gross negligence of the basic and heavy industries during the First Five-Year Plan created serious difficulties during the Second Plan.

Lastly, the government did not use the techniques of control and regulation which were discussed in detail in the First Five-Year Plan. It appeared to be somewhat optimistic about achieving the modest targets. It failed to visualise shortages of foreign exchange, foodgrains, industrial raw material, and the rise in price level during the next Five-Year Plan.

Conclusion. Despite these defects, the First Plan was the first attempt at lifting the stagnant Indian economy from its morass. One of its main contributions had been the creation of a favourable mental and psychological climate for rapid economic development throughout the

country. It was a preparatory plan and laid the foundation for subsequent bigger plans.

SECOND PLAN (APRIL 1956—MARCH 1961)

The Second Five-Year Plan was launched on 1 April 1956. It was much bigger and more ambitious than the First Five-Year Plan.

Objectives. It aimed at rebuilding rural India. "To lay the foundations of industrial progress and to secure to the greatest extend possible opportunities for weaker and underprivileged sections of the people and the balanced development of all parts of the country." Its approach was quite different from the First Plan. The First Plan had no definite objective in view. The Second Five-Year Plan, on the other hand, had the broad objective of the establishment of a *socialist pattern of society* in a welfare state. Keeping in view this broad aim, the Second Plan laid down the objectives of (a) "A sizable increase in national income so as to raise the level of living in the country; (b) rapid industrialization with particular emphasis on the development of basic and heavy industries; (c) a large expansion of employment opportunities; and (d) reduction of inequalities in income and wealth and a more even distribution of economic power." Thus the Plan aimed at achieving an objective-mix of four interrelated objectives.

Outlay. The Second Five-Year Plan was an '*industries and transport plan*' in contrast to the First which was essentially an '*agriculture and irrigation plan*'. Initially, the proposed development outlay in the public sector was Rs 4,800 crores and in the private sector Rs 2,400 crores. Thus making up a total of Rs 7,200 crores for the entire plan-period. But the actual public investment was short by Rs 200 crores, i.e., Rs 4,600 crores. Its break-up is shown in Table 63.2 of Chapter 63. Total investment, both public and private, was Rs 6,750 crores. About 72 per cent of it came from domestic resources and 28 per cent from foreign sources.

A Critical Appraisal. The Second Five-Year Plan was an ambitious and bold plan—ambitious in its targets and bold in its outlay. Unlike the First Plan, it fell short of the actual expenditure by only Rs 200 crores. The difficulties encountered by the Plan from its very inception were serious and numerous. It had to face the brunt of the unexpected failure of the monsoons, the Suez crisis, the foreign exchange difficulties and the pressure of rising prices. There were, therefore, many ups and downs in achieving the targets.

Despite these difficulties, the upward trend of the First Five-Year Plan was continued and maintained. Reckoned at 1948-49 prices, total investment increased by Rs 711 crores per annum during the Second

Plan period. The investment coefficient increased by 4.4 per cent. However, the saving income ratio increased by only one per cent, i.e., from 7.5 per cent to 8.5 per cent during the Plan period. The gap between saving-investment rates had to be bridged through external assistance, import surpluses and foreign exchange reserves. The national income increased by 19.5 per cent while the per capita income increased by only 8 per cent at 1960-61 prices. This huge difference between the two was due to the phenomenal growth rate of more than 2 per cent per annum of population during the Plan period. The Planning Commission's estimate of 1.3 per cent per annum growth rate of population proved wrong while the national income and the per capita income did not rise to the desired extent. The failure of the national income to rise to the estimated level of 25 per cent is attributed to a low capital-output ratio of 2.3:1, assumed by the Planning Commission for the Plan period. But during the Plan, greater emphasis was laid on capital-intensive schemes with long gestation periods, as a result the capital-output ratio worked out to 3.86:1, and the national output could not rise and touch the postulated level.

In the agricultural sphere, the production of foodgrains increased from 65.8 million tonnes to 76 million tonnes, that of cotton from 4 million bales to 5.1 million bales, of sugarcane from 6 to 8 million tonnes, and of oilseeds from 5.6 to 7.1 million tonnes. The index number of agricultural production (1949-50=100) for all crops rose from 117 to 135 during the Plan period.

There was significant advance in the industrial field. During the Plan, production of iron ore and aluminium rose by 150 per cent, that of steel ingots by 100 per cent, of machine tools by 500 per cent and installed power in generation capacity by 68 per cent. The general index of the industrial production (1950-51=100) rose by 40 per cent. The Second Plan being essentially "an industry and transport plan," India had started producing large quantities of machinery, machine tools for agriculture, industry and transport, heavy electrical equipment and scientific instruments. One of the major steps towards building a solid capital base was the establishment of three steel mills in the public sector with an initial capacity of 10 lakh tonnes each at Durgapur, Bhilai and Rourkela. Further the production capacities of the Tata Iron and Steel Company, the Indian Iron and Steel Company, and the Mysore Iron and Steel Works were raised by 7 lakh tonnes, 5 lakh tonnes and 75 thousand tonnes respectively. Another achievement in the industrial field was the production of new items, such as tractors, newsprint, motorcycles, scooters, sulpha and antibiotic drugs, DDT, dyestuffs, etc. Rapid progress was made in the case of durable consumer goods like sewing machines, fans, radios, bicycles, electric goods, etc.

In the social sphere, land reform measures were carried further. There was also a significant expansion of educational and health services.

No doubt the Second Five-Year Plan was instrumental in bringing about substantial increases in agricultural and industrial output over the First Plan but it failed to achieve its targets in many respects. The national income was less by 5.5 per cent from the stipulated target. Production of cotton, jute, sugarcane, oilseeds, coal, finished steel, electric energy, and many others fell short of their targets. The Plan even failed to achieve its target of providing employment to 10 million persons, for it could absorb only 6 million.

It was on account of its failure to achieve the fixed targets that the Second Five-Year Plan has been characterised as an over ambitious plan. The reasons for the slow growth rate of the economy were: (a) Agricultural production was not uniform and continuous to meet the requirements of the industrial sector due to uncertain monsoons. (b) Even the industrial production was discontinuous due to raw material shortages, non-availability of adequate power and machines. (c) Acute foreign exchange difficulties developed from the very beginning of the Plan due to large imports of foodgrains, essential raw material, and heavy machinery and equipment. India's foreign exchange reserves were depleted to the tune of Rs 521 crores during the Plan period. Despite this, a severe foreign exchange crisis developed which delayed the execution of certain schemes like fertilizer production, heavy chemicals and power projects. (d) The failure of cottage and small industries to boost the production of consumer goods, administrative inadequacies and lack of transport facilities spread inflationary pressures in the economy. Over the five-year period, the rise in the general index of wholesale prices had been about 30 per cent. This trend of rising prices made India a good market to sell and a bad market to buy goods. As a result, Indian exports did not show any sign of improvement. They were almost stagnant. During the Plan period they improved by a small margin of Rs 51.3 crores.

The Second Five-Year Plan had to suffer a lot at the hands of its framers. No sooner was it conceived than some of its targets were inflated. Then it had to experience serious foreign exchange crisis which led critics to term it as the "crisis of ambition". In June 1958, it was decided to prune the Plan. It was divided into two parts. The first part constituting the "hard core" of the Plan involved an outlay of Rs 4,500 crores. It included those projects which were indispensable and on which work had already been started. In other words, all the essential schemes like power projects, basic and heavy industries and transport development fell under this category. The second category consisted of

the remaining schemes, provided additional resources to the extent of Rs 300 crores were available. However, when the Plan was completed, the actual expenditure was Rs 4,600 crores.

THE THIRD PLAN (APRIL 1961—MARCH 1966)

The Third Five-Year Plan represented the first step towards the long-term development of the economy extending over the next fifteen years (1961-76). The Plan report stated that "in the course of this period India's economy must not only expand rapidly; but must, at the same time, become self-reliant and self-generating."

Objectives. It set out the following main objectives: (i) "to secure increase in national income of over 5 per cent per annum, the pattern of investment being designed also to sustain this rate of growth during subsequent plan periods; (ii) to achieve self-sufficiency in foodgrains and increase agricultural production to meet the requirements of industry and export; (iii) to expand basic industries like steel, chemicals, fuel and power, and to establish machine-building capacity, so that the requirements of further industrialization could be met within a period of ten years or so mainly from the country's own resources, (iv) to utilize to the fullest possible extent the manpower resources of the country and to ensure a substantial expansion in employment opportunities; and (v) to establish progressively greater equality of opportunities and to bring about reduction in disparities in income and wealth and a more even distribution of economic power."

Outlay. In order to achieve them, the Third Plan was to be bigger in size than the Second Plan. An estimated outlay of Rs 7,500 crores was fixed for the public sector. Investment in the private sector was fixed at Rs 4,100 crores, thus making a total investment (leaving Rs 1,200 crores on Current Account) of Rs 10,400 crores which was 54 per cent higher than Rs 6,750 crores spent in the Second Plan. But the actual outlay in the public sector was Rs 8,576 crores which is shown in Table 63.3.

A Critical Appraisal. The Third Plan formally ended on 31 March 1966. It had not been an overall success. In its assessment of the Third Plan, the Planning Commission pointed out that "the progress had been less than adequate and less than anticipated," the most significant shortfalls being in the agricultural and the industrial sectors. "In financial terms, the targets of the Plan had been reached. But several physical targets of the production and capacity could not be achieved—owing largely to the unsavourable weather conditions which gave a serious setback to agricultural production, failure to take preparatory action, delays in finalizing schemes, time taken in negotiating foreign assistance and obtaining equipment, hangover of certain shortfalls in the

Second Plan, aggression on our borders and the long gestation period and phasing for most of the projects and programmes."

Achievements in the *agricultural sector* at the end of the Plan period (1956-66) fell short of the original estimates. With the exception of sugarcane, production in the case of other commodities was far below the estimated targets due to the poor contribution of agriculture. The sharp fall in agricultural production in 1965-66 was unprecedented which brought the index number of farm output to the 1959-60 level. This was due to a severe drought in the last year of the Plan.

The performance in the *industrial sector* had been no less discouraging. The growth rate was 7.2 per cent per annum as against the estimated 11 per cent. The Planning Commission attributed the slow rate of growth of output in the industrial sector mostly to shortage of imported raw materials, spares and components. But the fact was that too much emphasis was laid on heavy and capital goods industries for increasing the capacity of the economy. For this, the availability of managerial talents, skilled personnel and foreign exchange resources were not properly assessed which led to various bottlenecks and poor performance of the projects. In no field, actual production in 1965-66 even neared the targets laid down in the Plan. Power schemes also fell short of the estimated target of 12.7 million. It was 10.2 m kw.

Despite these apparent shortfalls in certain selected areas from the targets laid down in the Third Plan, the overall performance in the five-year period was satisfactory in the field of industrial production. There was substantial increase in the growth capacity of steel, aluminium, chemicals, engineering, petroleum and fertilizer industries. In particular, the value of machine tools manufactured went up from Rs 7 crores at the beginning of the Plan to Rs 29 crores and of sugar machinery the value was about two-fold. Similar progress was made in producing heavy electric equipment, heavy engineering machinery, heavy foundry forge, heavy plates, chemicals, etc. In particular, the production of crude petroleum went up from 0.4 to 3 million tonnes, of paper and board from 350 to 560 thousand tonnes, of plastics from 9.5 to 31.3 thousand tonnes, of fertilizers nitrogenous (*N*) 101 of 532 thousand tonnes and of fertilizer phosphatic (P_2O_5) 53 to 123 thousand tonnes.

Good ground was covered in providing road and sea *transport* facilities and in the freight moving capacity of railways. Surfaced roads increased from 236 to 287 thousand kms, the number of commercial vehicles on roads from 22,500 to 33,300 and railway freight carried from 156 to 203 million tonnes.

In general education, while enrolment was not held back, the teacher-pupil ratio lowered, leading to a deterioration in general standard. Progress in technical education, on the other hand, had been

encouraging. The Plan target for annual admissions for degree level, engineering and technology was exceeded in 1963-64. In the last two years of the Plan, admissions were further increased.

In the sphere of social service, some progress was also made in medical, public health and family planning facilities, welfare of backward classes and tribes, houses for industrial workers and low-income groups. The most noteworthy achievements in the field of public health had been the eradication of malaria and increase in the average expectation of life to 50 years. The number of family planning centres increased from 1,100 to 3,676 in rural areas and from 549 to 1,381 in urban areas. Several other social service schemes could not make enough headway due to the diversion of funds to other programmes in view of the Emergency created by the Chinese and the Pakistani invasions.

The Third Plan failed to create enough jobs to meet the overall demand for employment opportunities arising from the growth of population, migration from rural into urban areas and educational development. The Plan started with a backlog of 8 million unemployed. With the rise in the labour force, unemployment was estimated to rise to 25 million during the Plan period. The Third Plan could create 14 million additional jobs. Thus it had not been successful in providing jobs even to the new entrants.

The Third Plan failed to check the continuous rise in the price level. The trend started with the Second Five-Year Plan, received an upward thrust in the wake of the National Emergency and since then the price level had been on the increase. In 1965-66, the general index of wholesale prices was 32 per cent higher than in 1960-61. This phenomenal rise in the price level acted as a disincentive to the realization of several physical targets of production. Too much emphasis in meeting the total outlay of the Plan led to the heaviest amount of deficit financing (Rs 1,113 crores) and additional taxation (Rs 2,892 crores, mostly indirect) which along with sluggish farm output led to inflationary pressures in the economy.

The failure of the agricultural and industrial sectors to reach the estimated targets of production had disquieting effect of keeping the overall growth rate of the economy at 2.2 per cent, much below the stipulated level of 5 per cent per annum. The failure of the growth rate of national income to reach the level of 5 per cent per annum and of the growth rate of population to fall below 2.5 per cent kept the per capita income at almost the same level at the end of the Plan period.

As usual, the Planning Commission's estimate of the incremental capital-output ratio was wide off the mark. The Third Plan assumed a capital-output ratio of 2.3:1 but it was much higher, i.e., 3.53:1. The

Planning Commission again miscalculated in assuming a favourable capital-output ratio.

The *balance of payments* position remained tight throughout the Plan period. The volume of imports had been much higher than exports. In 1965-66, imports touched the figure of Rs 1,335.3 crores and exports fell to Rs 781.8 crores.

One of the principal defects of the Third Plan had been the lack of *coordination* between the Centre and the States which led to inordinate delays in the implementation of the Plan schemes. This was due to the absence of "organizational planning" "Specialization and departmentalization in administration had been going on unabated during the last decade, but training, delegation, coordination, control and motivation had been neglected. Relationship between official and non-official groups was seldom harmonious and the attitude of the people towards Governmental machinery was still determined more by authority and fear than by willing co-operation."

Did the Third Plan achieve its goal of a "self-reliant and self-generating economy? This can be verified from the domestic saving-income ratio. According to the estimates of the Planning Commission, domestic savings were expected to rise to 11.5 per cent at the end of the Third Plan. In 1951-52, domestic savings were 5.3 per cent of our national income. Making due allowance for the net inflow of investable funds from abroad, domestic savings as a percentage of national income rose to around 8 per cent in 1960-61 and to 10.6 per cent in 1965-66. The ratio of investment to national income also went up from 11 to 13 per cent at the end of the Third Plan. It is, therefore, obvious from these data of the domestic saving and investment-income ratios that the Indian economy could at the most reach the "take off" stage at the end of the Third Five-Year Plan from where she might look forward to "self-sustaining growth" in the Fourth Five-Year Plan.

ANNUAL PLANS (1966-67—1968-69)

The Third Five-Year Plan expired on 31 March 1966 and the Fourth Plan should have ordinarily commenced from 1 April 1967. A Draft Outline was, in fact, brought out in August 1966. But the finalisation of the Plan was delayed due to severe stresses which had been developing in the economy since the last year of the Third Plan. In the intervening period, the economy was geared to the policy of Annual Plans for the years 1966-67 to 1968-69. In September 1967, the Planning Commission was reconstituted which decided to have an Annual Plan for 1968-69 as well, and to start the Fourth Five-Year Plan from 1969-70. Thus the intervening period (1966-67 to 1968-69), between the expiry of the Third

Plan and the beginning of the Fourth Plan, pertains to the Annual Plans.

The three Annual Plans aimed at removing strains in the economy arising from many unforeseen events of the Third Plan and to secure a feasible growth rate without generating inflationary pressures in the economy. The emphasis had been towards the fuller utilisation of the infrastructure already created and filling up the essential gaps in the economy to pave the way for future development.

The expenditure in the Annual Plans by various heads of development was Rs 6,625 crores, as given in Table 63.4.

A Critical Appraisal. During the first two Annual Plans there was little improvement in the overall economic situation of the country. In the 1966-67 Plan, national income rose by only 1.1 per cent due to a severe drought. In the 1967-68 Plan, it rose by 9 per cent mainly as a result of improvement in agricultural production, whereas in 1968-69 it was 1.1 per cent higher than in 1966-67.

Such varied fluctuations were the result of uncertainties in agricultural production. In 1966-67, foodgrains production was a mere 76 million tonnes. But in 1967-68 it reached 95.1 million tonnes and was 98 million tonnes in 1968-69. The production of other important crops also recovered during the three years of the Plans, but not substantially. The index of agricultural production for all commodities was 161.0 (1949-50=100) in 1967-68 which came down to 158.7 in 1968-69.

There was a sharp decline in industrial production during 1965-66 due to an increase in unutilised capacity in a number of industries. As a result, the index of industrial production fell to 0.2 per cent in 1966-67 and 0.5 per cent in 1967-68. However, there was some recovery in 1968-69 and industrial production rose by 6.2 per cent.

During these three years the price level continued to rise, though there was some respite in the closing months of the year 1968-69. The wholesale prices rose by 16 per cent in 1966-67 and further by 11 per cent in 1967-68.

The Third Plan was under heavy trade deficit and debt obligations which necessitated the devaluation of the rupee in June 1966. As a result, exports increased and imports declined and there was improvement in the balance of payments during these three years.

Conclusion. On the whole, the three Annual Plans (1966-68) were instrumental in uplifting the economy from the morass of 1965-66 to which it had fallen in the last year of the Third Plan. They helped in increasing agricultural production and overcoming recession and paved the way for starting the Fourth Plan by removing strains and stresses in the economy. They kept up the tempo of development initiated by the earlier Plans. The provision for a large outlay each year silenced the critics who characterized this period from 1966 to 1968 as one of a plan

holiday. But despite larger outlays, actual achievements fell short of targets due to delays in implementation and contraction, revision of cost estimates and underutilisation of capacity.

THE FOURTH PLAN (APRIL 1968—MARCH 1974)

In September 1967, the Planning Commission was reconstituted under Professor D.R. Gadgil. It presented the objectives and strategy of the Fourth Plan in a document 'Approach to the Fourth Five-Year Plan' in May 1968 to the National Development Council. The Draft of the Fourth Five-Year Plan (1969-74) was placed before the Parliament on 21 April 1969 and the whole Plan in March 1970.

Aims and Objectives. The Fourth Plan aimed to step up the tempo of development activity to the extent compatible with maintaining stability and progress towards self-reliance. The Plan defined the broad objectives of planning as "rapid economic development accompanied by continuous progress towards equality and social justice and the establishment of a social and economic democracy." In the light of this definition, it laid down that the basic goal of the Fourth Plan was a rapid increase in the standard of living of the people, through measures which also promoted equality and social justice. It thus placed emphasis on the common man, the weaker sections and the privileged ones. To achieve these broad aims, it laid down that: (a) planning should lead to greater equality in income and wealth; (b) there should be progressive reduction of concentration of incomes, wealth and economic power; and (c) benefits of economic development should accrue more and more to the relatively less privileged classes of society, specially the scheduled castes and scheduled tribes.

The Plan emphasised the need for refashioning socio-economic institutions in order to bring about rapid economic development oriented towards establishing social justice and for the strengthening of democracy in its social and economic aspect. To achieve these aims the major objectives of the Plan were: (i) to achieve stability and progress towards self-reliance; (ii) to achieve an overall growth rate of 5.7 per cent per annum; (iii) to achieve an annual growth of 5.6 per cent in agriculture; (iv) to stabilise the price level of foodgrains and other essential consumer goods; (v) not to import foodgrains under PL 480 beyond 1970-71; (vi) to achieve an annual growth rate of 8 to 10 per cent in industry; (vii) to raise exports at the annual rate of 7 per cent and non-food exports at 5 per cent; (viii) to bring down the quantum of foreign aid to half of its present level in the last year of the Plan; and *lastly*, to correct regional imbalances through balanced regional development and dispersal of economic activity.

Outlay Pattern. The total outlay envisaged in the Fourth Plan was Rs 24,882 crores. Of this, public sector outlay was Rs 15,902 crores but the actual outlay was Rs 15,779 crores, as shown in Table 63.5.

A Critical Appraisal. The Fourth Plan was a well thought-out document. It was a big and bold Plan in terms of its outlays and targets. But it was by no means an over-ambitious Plan if we were to take into consideration the 5.6 per cent growth rate in agriculture, 8 to 10 per cent in industry and 5.7 per cent for the economy as a whole.

The Plan failed to achieve its targets in agriculture. Over the Plan period, the production of foodgrains was estimated to rise from 98 m. tonnes to 129 m. tonnes. But it was 104.7 m. tonnes in 1973-74 thereby giving a percentage increase of 7.2 per cent as against the targeted increase of 31.6 per cent. The performance of individual foodgrain crops was very uneven. The achievements were much below the targets in the case of all foodgrains including wheat, rice, maize, jowar, pulses, etc., except bajra. Similarly, there had been shortfalls in the production of commercial crops like sugarcane, oilseeds, cotton and jute. The overall growth rate of agricultural production during the Plan period was only 2.8 per cent per annum as against the targeted growth rate of 5.6 per cent per annum.

The growth rate of industrial production set at 8 to 10 per cent per year was not achieved during the Plan period. In actuality, the achieved rate of growth was 3.9 per cent per annum. The major reasons for the failure to achieve the envisaged growth rate of industrial production were: (i) inadequate capacity of plants, (ii) operational problems in industrial units like steel, fertilizers, etc., (iii) lack of maintenance, (iv) design deficiencies; (v) shortfalls in investment in capital goods, (vi) shortages of steel and non-ferrous metals, (vii) shortage of power and coal, (viii) problems of movement of raw materials, coal machines, etc., (ix) labour unrest, (x) shortage of construction materials, (xi) larger reliance on domestic equipment and technology, and (xii) delays in building up administrative, technological and managerial capabilities.

In the Fourth Plan, an annual growth rate of 7 per cent was envisaged for exports. But the total exports during the Plan showed a spectacular increase. The average annual growth rate of exports was 12.8 per cent for the Plan period.

One of the objectives of the Fourth Plan was to reduce the foreign aid net of debt servicing (inclusive of interest payments) to half the pre-Plan level of Rs 528 crores. But the Plan failed to achieve this.

Though the actual expenditure on power development programmes (Rs 2,983 crores) during the Fourth Plan exceeded the allocations (Rs 2,447.57 crores), yet there had been an appreciable shortfall in achievements. The installed capacity at the end of March 1969 was 14.3

m kw. The Fourth Plan sought to add 9.3 m kw to existing capacity, but not more than 4.6 m kw were added by the end of the Plan. Thus about 50 per cent of the targeted additional capacity spilled over into the Fifth Plan. This led to acute power shortage in the country. The main reasons for such a situation were the steep escalation in cost estimates of power projects; lack of adequate project management and monitoring; shortages of key materials; delay in civil works; and delay in the supply of major equipment.

The *price situation* during the Fourth Plan was perhaps the worst over the years since India launched the planning era. The index of wholesale prices (base 1961-62) for all commodities rose by about 12 percentage points on an average per year. The strong upward pressure in prices which developed in 1973 and accentuated in 1974 led to a chain of strikes, economic hardships and social unrest with the economy. These turned out to be serious bottlenecks for the implementation of the Fifth Plan.

The Fourth Plan had estimated to raise the rate of domestic saving from 8.4 per cent to 11.9 per cent and the rate of investment from 9.5 per cent to 13.1 per cent over the Plan period. The Plan was successful in achieving the estimated rates of saving and investment. The rate of domestic saving increased from 8.4 per cent in 1968-69 to 13.6 per cent in 1973-74 and the rate of investment from 9.5 per cent to 14.4 per cent over the same period.

Though the growth rate of 5.7 per cent of national income and 3 per cent of per capita income were modest and realistic in view of the previous performance of the economy, yet the economy failed to achieve them. The overall growth rate of the economy during the Fourth Plan averaged 3.3 per cent per annum, and the per capita income 1.2 per cent per annum.

THE FIFTH PLAN (APRIL 1974—MARCH 1979)

The Fifth Plan was formally launched on April 1974 on the basis of the Annual Plan for 1974-75. The Draft Fifth Five-Year Plan was brought out in January 1974 and the Final Fifth Five-Year Plan in late 1976 with a total outlay of Rs 39,322 crores. The actual amount of expenditure during the five-year period was Rs 39,426.2 crores, as shown in Table 63.6.

Objectives and Instruments of Policy. The two strategic objectives of the Fifth Plan were removal of poverty and attainment of economic self-reliance.

Removal of the Poverty. The Plan Report stated: "Underdevelopment and inequality are the twin causes of poverty. A large proportion of the

population has to go without even the most essential needs of daily life because total national income, and hence aggregate consumption, is too small relatively to the enormous size of the population and; secondly, the distribution of this income and consumption is very uneven. For a successful attack on poverty, growth and reduction are both indispensable."

Poverty level was defined in terms of a minimum level of consumption. In the Fifth Plan, private consumption of Rs 40.6 per capita per month at 1972-73 prices had been taken as a minimum desirable consumption standard. The Plan Report noted: "Elimination of poverty requires that large numbers of our people living below the poverty level must be enabled to have access to the minimum private consumption envisaged above." Further, there should be a rising rate of growth of domestic product along with a declining rate of growth of population.

The creation of more jobs and job opportunities was the principal instrument of economic policy if the incomes of the poorest at 30 per cent were to be increased. The bulk of the new opportunities would come within agriculture and other allied activities.

The Plan aimed at diminishing concentration of economic power by creating an efficient and dynamic public sector ensuring improvement in productivity, especially in agriculture, and by encouraging new entrepreneurs in areas suffering from lack of competitive investment. In this context, public ownerships of the financial institutions were to be used to exercise appropriate forms of social control.

Removal of poverty also required a minimum level of social consumption for different areas and sections of the community. This was incorporated as the National Programme of Minimum Needs in the Fifth Plan which included: (i) "The provision of facilities for elementary education for children up to the age of 14 at the nearest possible places to their homes; (ii) Ensuring in all areas a minimum uniform availability of public health facilities, which would include preventive medicine, family planning, nutrition and detection of early morbidity and adequate arrangements for referring serious cases to an appropriate higher echelon; (iii) Supplying drinking water to villages suffering from chronic scarcity or having unsafe sources of water; (iv) Provision of all weather roads to all villages having a population of 1500 persons or more; this minimum limit being conceived of as for a cluster of villages in the case of hilly, tribal and coastal areas; (v) Provision of developed home sites for landless labour in rural areas. (vi) Carrying out environmental improvement of slums; and (vii) Ensuring the spread of electrification to cover approximately 30-40 per cent of rural areas.

Thus the policy measures for the removal of poverty in

postulated rates and patterns of growth of the various sectors of the economy, freeing the development process from dependence on foreign aid, and effective and integrated population policy, the provision for the National Programme of Minimum Needs, the emphasis on employment opportunities, the stress on the uplift of backward classes and development of backward regions, and an efficient public procurement and distribution system to ensure availability of essential goods to the poorer sections of the country at reasonable prices.

Self-Reliance. The objective of self-reliance postulated freedom from external assistance so that the economy was able to support itself within a period of 10 or 12 years so as to provide an adequate scale of investment from its own production and savings. The three essential ingredients of the objective of self-reliance were: (i) elimination of special forms of external assistance; (ii) self-reliance efforts to be phased over time; and (iii) external assistance during the intervening period must help to build up the growth potential of the economy to the level where it can support an adequate level of investment from its own production and savings. The objectives of removal of poverty and self-reliance require a restructuring of output in favour of goods and services that go into investment, exports, and essential private and public consumption or serve as indispensable intermediate for the production of the needed final goods and services. Further, these objectives called for a modification of the existing structure or demand in favour of investment and social consumption and reduced dependence on foreign funds. This was the essence of the problem of recasting the structure of demand.

A Critical Appraisal. The Fifth Plan achieved an average annual growth rate of 5.2 per cent in national income at 1970-71 prices which was the highest as compared to the earlier Five Year Plans. But the growth rate of per capita income was 2.92 per cent on the average due to high growth rate of population. Agricultural production grew at an annual rate of 4.58 per cent against the target rate of 3.3 per cent. The growth rate of industrial production was 6.2 per cent which equalled the rate postulated in the Plan. But the growth rate of electricity generated during the Plan was 9 per cent which was more than the targeted rate of 8.2 per cent. There was remarkable price stability during the Plan period for prices rose by only 4.1 per cent per annum.

Despite these achievements on the domestic front the external front continued to witness deterioration in the balance of payments position. Imports grew at an average rate of 19.6 per cent and exports at 18.3 per cent per annum. Exports growth was sluggish in the wake of recessionary situation and protectionist tendencies in the major developed countries. Although the overall performance of the economy

was satisfactory, the Plan failed to make any impact on the basic problems of poverty and unemployment.²

A Resume of Objectives and Achievements

Broadly, the objectives of Five Year Plans have been: (a) to increase national income and per capita income; (b) to expand employment opportunities; (c) to reduce inequalities of income and wealth, and concentration of economic power; (d) to eradicate poverty; (e) to raise agricultural production; (f) to industrialise the economy; (g) to achieve balanced regional development; and (h) to achieve self-reliance so as to minimise the dependence on foreign aid. These objectives can be grouped under four heads: growth, modernisation, social justice and self-reliance.³

²For objectives and achievements of the Sixth Plan and the Seventh Plan, refer to Ch. 65 & 83 respectively.

³The extent to which these objectives have been achieved refer to Ch. 84.

Chapter 63

THE STRATEGY OF INDIAN PLANNING

INTRODUCTION

Plan strategy refers to the methods followed in executing a development plan. It "implies essentially a deliberate choice—a choice of the print and timing and manner of attack of the problem at hand."¹ To Lady Ursula Hicks, "The term *strategy* is a long-run concept. It is not immediately operational in the sense that a strategy must look forward for 15 or 20 years. We cannot precisely foretell what will happen in India or the world at large. So the strategy must be a flexible affair although it would have certain elements which no doubt would run through in any case."²

The basic task of plan strategy is to bring about functional and structural transformation of the economy in the light of the objectives laid down in various development plans. Since planning is a long-term continuous process, there is no single strategy underlying Indian planning. It had been an admixture of balanced and unbalanced growth strategies with emphasis on 'heavy industries first' up to the Fourth Plan. With the Fifth Plan, the strategy of planning shifted toward the reduction in absolute poverty, unemployment, and inequalities, and meeting basic human needs. But the overall strategy continues to be one of balanced growth.

Strategy of the First Plan. The strategy of the First Plan was to rehabilitate the Indian economy which had been hit hard by the Second World War and the Partition. Accordingly, the emphasis was to create the necessary economic and social overheads like power, transport, public health, education etc., and to develop agriculture in order to create a solid base for industrialization in the subsequent plans. But the main defect of this strategy was that the development of industries and minerals was primarily left to the private sector, public expenditure on them being 6 per cent of the total. This led to serious difficulties of foreign exchange, industrial raw materials, rising prices, etc. during the

¹I.G. Patel, "Strategy of Indian Planning," in Pramit Chaudhuri (ed.), *Aspects of Indian Economic Development*, 1971.

²*Challenge of Poverty in India*, (ed.) A.J. Fonseca, 1971.

Second Plan when the strategy was one of making large investments in key and heavy industries. The main reason, according to Professor John P. Lewis, was that the First Plan was simply a collection of discrete State and ministerial projects with very little interdependence. The Plan was thus based on had procedural model.¹

THE MAHALANOBIS STRATEGY

Strategy of the Second Plan. P C Mahalanobis, the framer of the Second Plan, outlined an unbalanced growth strategy for the long-term planned development of the Indian economy. According to Mahalanobis, the basic strategy of the Second Plan was "to increase investments in the heavy industries and also expenditure on services, to increase purchasing power and create fresh demand, and, on the other hand, to increase the supply of consumer goods by increasing investment and production as much as possible in the small and household industries to meet the new demand." This strategy was conceived in such a way that the Plan was to create larger employment opportunities, build a strong capital base and increase productive and technical capacity within the economy. Accordingly top priority was accorded to industrialisation through the development of heavy industries like machine, building, steel, non-ferrous metal, machine tools, heavy chemicals, cement, electricals, etc., especially in the public sector. Employment potential of heavy industries being limited during the short period, attention was focused on the development of small and village industries. The small and village industries were also expected to meet the increasing demand for consumer goods in order to avoid inflationary pressures. Increased agricultural production was considered essential to supply additional foodgrains for the growing population and raw materials for industrial progress. This was to be achieved through more intensive application of land reforms, National Extension Services, Community Development Programmes, Cooperatives credit facilities and extension of irrigation facilities.

In brief, the Mahalanobis strategy laid excessive emphasis on heavy industry and neglect of the consumer industries and of agriculture implying capita-intensive rather than labour-intensive investments.

A Critical Appraisal

The Mahalanobis strategy was successful in creating a solid base for heavy industries and in starting a number of new consumer goods industries in the country. The latter related to such items as tractors,

¹P. Lewis, *Quiet Crisis in India*, 1962

newsprint, motor cycles, scooters, sewing machines, radios, electrical goods, sulpha and antibiotic drugs, DDT, dyestuffs, etc.

However, massive investments in heavy industries led to the neglect of essential consumer goods industries like sugar, cloth, edible oils, etc. For a country with growing demand of a huge population, dependence on small and village industries for the supply of essential consumer goods was a sheer folly.

Increase in agricultural production through the extension of irrigation facilities and community development programmes failed to meet the growing requirements of raw materials for industries and of foodgrains for the masses. No specific measures were laid down to counteract the vagaries of nature and to boost agricultural production in the country.

Naturally, there were acute shortages of foodgrains, raw materials and essential consumer goods. These were sought to be removed through extreme reliance on physical controls and restrictions of various kinds on essential commodities. These, in turn, led to hoarding, corruption and black marketing. Consequently, inflationary pressures got built up in the economy. Again, to overcome these shortages of foodgrains and essential raw materials, they were imported which resulted in the shortage of foreign exchange and to the problem of balance of payments.

The Mahalanobis strategy led to the adoption of the policy of import substitution as a means to achieve self-sufficiency in industrial production. This resulted in malallocation of resources. Indiscriminate protection led to the establishment of inefficient and low priorities industries. Consequently, raw materials, intermediate goods and equipment imported at a high cost were misused. V. V. Desai estimated that the growth of non-essential production resulted in the loss of potential saving to the extent of Rs. 800 crores during 1954-55 and 1963-64.⁴ Further, it led to inadequate planning of the industrial structure and systematic underestimation of the foreign exchange exceeding availability, thereby forcing many industries to operate below capacity. This policy of industrialisation via import substitution and the neglect of export promotion in the earlier phase of Indian planning created severe foreign exchange scarcities.

Moreover, the Mahalanobis strategy was based on the orthodox "saving-centred" strategy which obstructed the production strategy in two ways: (i) to determine the volume of total unspecified investment to be undertaken in the plan period and only thereafter to go to the question of investment allocation; and (ii) to use the technique of

⁴V. V. Desai, "Import Substitution and Growth of Consumer Industries, *Economic and Political Weekly*, 15 March 1969.

"planning backward" from final demand targets. The latter was the only practical approach for achieving a balance between aggregative and detailed planning. But this planning backward approach could not be a success due to lack of data required for a final demand oriented production programme. These loopholes in the Second Plan strategy led to the failure of the Plan to achieve its objectives and targets.³

The saving-centred strategy implies that a savings gap arises when the domestic saving rate is less than the investment required to achieve the target growth rate of the economy. In order to fill this gap, emphasis was laid on foreign aid to provide the missing components in the form of capital, technical knowhow and foreign exchange. This resulted in the problem of balance of payments and of external debt in the subsequent plans.

Finally, the Mahalanobis strategy identified the economic development of India with the growth of GNP/GNP per capita. To achieve the target growth rate, it stressed rapid industrialisation. It was believed that the gains from growth of GNP would automatically "trickle down" to the poor in the form of increased employment and income opportunities. This was a serious weakness of the strategy. Without laying down specific policy measures, the growth in GNP per capita failed to solve the problems of poverty, unemployment and inequalities. Rather, these problems were accentuated in subsequent Plans.

Strategy of the Third Plan. The strains and stresses experienced by the economy during the Second Plan made the planners more cautious while launching the Third Plan. The Plan was conceived as "the first stage of a decade or more of intensive development leading to a self-reliant and self-generating economy." The development strategy emphasised increase in agricultural production by providing adequate irrigation facilities, supplies of fertilizers, improved seeds, implements and machines, improved cropping patterns, and land reclamation and soil conservation schemes. Further the planners stressed the importance of developing the agricultural economy along cooperative lines and of a diversified rural economy in order to expand non-agricultural activities along with such activities as fish, poultry, animal husbandry and dairy farming, etc.

The industrial sector was regarded as crucial for securing rapid economic advance. For building a sound capital base and for self-reliant and self-sustained growth, special emphasis was placed on such industries as coal, oil, steel, electric power, chemicals, machine-building and engineering. The role of cottage and small industries was conceived as one of providing larger employment opportunities and of increasing

the supply of consumer goods and some producer goods.

Another feature of the development strategy of the Third Plan was to create a solid base for the expansion of exports so that the dependence on external assistance should disappear in the subsequent Plans. The Plan aimed at developing exports through such measures as raising productivity, reducing costs, and restraining consumption.

On the whole, "the strategy visualized for the Third Plan emphasized specially interdependence of agriculture and industry, of economic and social development, of national and regional development, and of the mobilization of domestic and external resources. It also placed great stress on measures for scientific and technological advance and for raising the general level of productivity, as well as on policies relating to population, employment and social change."

This was a balanced growth strategy. But the planners could not suddenly make changes in long-term projects which had been started during the Second Plan. So they had to continue large investments on the development of heavy and capital goods industries. This was also a logical sequel to the attainment of a self-reliant and self-generating economy. However, greater emphasis was laid in achieving self-sufficiency in food production and production of agricultural raw materials for domestic industries and exports. But the balanced growth "strategy was formulated without much regard to the choice possibilities either over time or at a point of time. The project formulation and selection process as a result became somewhat arbitrary. The resulting imbalances and inefficiencies were further aggravated by deficiencies in the technique of planning and in the actual operation of policies which suffered from lack of coordination as well as meaningful operation link with development objectives." Thus the actual strategy of the Plan turned out to be the Mahalanobis strategy of unbalanced growth.

In its assessment of the Third Plan, the Planning Commission observed that "the progress had been less than adequate and less than anticipated," the most significant shortfalls being in the agricultural and the industrial sectors. In financial terms, the targets of the Plan had been reached. But several physical targets of the production and capacity could not be achieved—owing largely to the unfavourable weather conditions which gave a serious setback to agricultural production, failure to take preparatory action, delays in finalising schemes, time taken in negotiating foreign assistance and obtaining equipment, hang-over of certain shortfalls in the Second Plan, aggression on our borders and the long-gestation period and phasing for most of the projects and programmes.

Consequently, this resulted in low growth rate of the economy, several inflationary pressures, and balance of payments crisis. The poor

performance of the Third Plan forced the Government to have Annual Plans for the next three years (1966-69). This period was termed as a "Plan holiday" by critics.

Strategy of the Fourth Plan. The dismal performance of the three Five Year Plans under the framework of the Mahalanobis strategy led the planners to evolve a second and realistic strategy for the Fourth Plan. There were two principal objectives of the Fourth Plan: maintaining growth with stability and progress towards self-reliance. The basic strategy of the Plan was to achieve these objectives through (a) economic stability; (b) achieving an overall growth rate of 5.7 per cent per annum; (c) achieving an annual growth rate of 5.6 per cent in agriculture; (d) achieving an annual growth rate of 8 to 10 per cent in industry; and (e) raising exports at an annual rate of 7 per cent and to reduce foreign aid to one-half. Accordingly, 23.3 per cent of the total Plan outlay was allocated on agriculture and irrigation development programmes, 19.7 per cent on industry and minerals, 19.5 per cent on transport and communications programmes, 18.6 per cent on power development, and 18.9 per cent on social services and others. Accordingly, it gave the highest priority to agricultural development in keeping with the high dependence of the Indian economy on agriculture. The strategy for industrial development was given a new tinge by emphasising the importance of dispersal of industries in order to reduce concentration of economic power, to increase employment opportunities, and for balanced regional development. Disparities of income and wealth were also sought to be reduced through various fiscal and educational measures. One of the important planks of the Plan's strategy was to increase exports and reduce imports and to do away with foreign aid gradually. Priorities were so accorded as to maintain stability and progress towards self-sufficiency in keeping with the overall strategy of balanced economic growth.

But the Plan failed to achieve its objectives. Except for the highest ever annual growth rate of exports averaging 12.8 per cent for the Plan period, the growth rates of the other sectors fell short of their targets. The growth rate of agricultural production was 3.8 per cent per annum, and of industrial production 3.9 per cent per annum. The addition to installed power capacity increased by 50 per cent of the Plan target. The overall growth rate of the economy averaged 3.3 per cent per annum. Moreover, the Plan could do nothing to minimise the problems of poverty, unemployment, and inequalities. However, the poor performance of the Fourth Plan was not due to any defect in its development strategy but the result of snags and spillovers of the Mahalanobis strategy of the Second and Third Five-Year Plans which had developed in the economy.

THE NEW DEVELOPMENT STRATEGY

The criticism against GNP/GNP per capita as an index of economic development and the "trickle down" strategy implied in the Mahalanobis strategy was gaining momentum among Indian and other economists, and World Bank officials. But the first public salvo was let loose by Dudley Seers in his presidential address at the Eleventh World Conference of the Society for International Development held in New Delhi in 1969. He posed the problem thus: "The questions to ask about a country's development are therefore: What has been happening to poverty? What has been happening to unemployment? What has been happening to inequality? If all three of these have declined from high levels, then beyond doubt this has been a period of development for the country concerned. If one or two of these central problems have been growing worse, especially if all three have, it would be strange to call the result 'development' even if per capita income doubled." Robert McNamara, the then Governor of the World Bank, admitted in February 1970 the failure of the GNP Growth rate as an index of economic development in the LDCs in these words: "In the first Development Decade, the primary development objective, a five per cent annual growth in GNP, was achieved. This was a major accomplishment. But this relatively high rate of growth in GNP did not bring satisfactory progress in the development. In the developing world, at the end of the decade: malnutrition is common, infant mortality is high, life expectancy is low, illiteracy is widespread, unemployment is endemic and growing, the redistribution of income and wealth is severely skewed." The Draft Fifth Five-Year Plan acknowledged: "Economic development during the two decades since the inception of planning has resulted in sizeable increase in average per capita income . . . Yet large numbers have remained poor. The existence of poverty is incompatible with the vision of an advanced, prosperous, democratic, egalitarian and just society implied in the concept of socialist pattern of development. . . Elimination of poverty must therefore, have the highest priority."⁶

Accordingly, a new development strategy with 'redistribution of investment' was adopted in the Fifth Plan with emphasis on progressive reduction in absolute poverty, unemployment and inequalities, along-with a rising growth rate of GNP per capita. The redirection of investment to poverty groups is to be achieved through *minimum (or basic) needs programme*.

⁶Government of India, Planning Commission, Draft Fifth Five-Year Plan, 1974-79, Vol. 1, 1973.

The basic human needs strategy lays emphasis on providing basic material needs in terms of health, education, water, food, clothing, shelter, work, etc., as well as non-material needs such as cultural identity and sense of participation and purpose in life and work. The aim is to raise productivity and alleviate poverty by providing basic human needs to the poor. It is argued that the direct provision of basic human needs affects poverty in a shorter period and with fewer resources than those strategies which aim at increasing the productivity and incomes of the poor automatically over the long run through capital-intensive techniques. Human resource development in the form of education, health and other basic needs leads to a higher level of productivity. It is especially so where the people are rural landless or urban poor and have no physical assets except their two hands and the will to work. But there is no conflict between economic growth and basic needs strategies.

Strategy of the Fifth Plan. The strategy of the Fifth Plan was in keeping with its twin objectives of the removal of poverty and attainment of economic self-reliance. Among other things, it envisaged:

- (i) 4.37 per cent overall growth of gross domestic product. This called for: (a) a higher level of investment, (b) higher level of efficiency, and (c) a higher level of saving and reduction of inequalities in incomes and consumption levels by making savings to come from the more affluent sections of society.
- (ii) Expansion of productive employment
- (iii) A national programme of minimum needs
- (iv) Emphasis on agriculture, key and basic industries producing goods for mass consumption
- (v) Adequate public procurement and distribution system for essential consumption goods to poor people at reasonable prices
- (vi) Extended programme of social welfare
- (vii) Vigorous export promotion and import substitution
- (viii) Rigorous restraint on non-essential consumption
- (ix) An equitable prices—wages-incomes balance
- Lastly, institutional, fiscal and other measures for reduction of social, economic and regional inequalities

Regarding the removal of poverty, the Plan stated: "For a successful attack on poverty, growth and reduction are indispensable." The main planks of the strategy for the removal of poverty were as under:

Poverty level was defined in terms of a minimum level of consumption. In the Fifth Plan, private consumption of Rs. 40.6 per capita per month at 1972-73 prices had been taken as a minimum desirable consumption standard. The Plan Report noted, "Elimination of poverty requires that large numbers of our people living below the poverty level must be enabled to have access to the minimum private consumption envisaged above." Further, there should be a rising rate of growth of domestic along with a declining rate of growth of population.

The creation of more jobs and job opportunities was the principal instrument of economic policy if the incomes of the poorest at 30 per cent were to be increased. The bulk of the new opportunities would come within agriculture and other allied activities, and from village and small industries.

The Plan aimed at diminishing concentration of economic power by creating an efficient and dynamic public sector ensuring improvement in productivity, especially in agriculture, and by encouraging new entrepreneurs in areas suffering from lack of competitive investment. In this context, public ownerships of the financial institutions were to be used to exercise appropriate forms of social control.

Removal of poverty also required a minimum level of social consumption for different areas and sections of the community. This was incorporated as the National Programme of Minimum Needs in the Fifth Plan which included: (i) "The provision of facilities for elementary education for children up to the age of 14 at the nearest possible places to their homes; (ii) Ensuring in all areas a minimum uniform availability of public health facilities, which would include preventive medicine, family planning, nutrition and detection of early morbidity and adequate arrangements for referring serious cases to an appropriate higher echelon; (iii) Supplying drinking water to villages suffering from chronic scarcity or having unsafe sources of water; (iv) Provision of all weather roads to all villages having a population of 1500 persons or more; this minimum limit being conceived of as for a cluster of villages in the case of hilly, tribal and coastal areas; (v) Provision of developed home sites for landless labour in rural areas; (vi) Carrying out environmental improvement of slums; and (vii) Ensuring the spread of electrification to cover approximately 30-40 per cent of rural population.

Thus the policy measures for the removal of poverty included the postulated rates and patterns of growth of the various sectors of the economy, freeing the development process from dependence on foreign aid, and effective and integrated population policy, the provision for the National Programme of Minimum Needs, the emphasis on employment opportunities, the stress on the uplift of backward classes and development of backward regions, and an efficient public procurement and distribution system to ensure availability of essential goods to the poorer sections at reasonable prices.

The Fifth Plan strategy was quite successful in achieving an average annual growth rate of 5.2 per cent in national income, of 4.58 per cent in agricultural production, of 6.2 per cent in industrial production, and of 9 per cent in electricity generation. Consequently, there was remarkable price stability because prices rose by only 4.1 per cent per annum. But if

failed to make any dent in the problems of poverty, unemployment and inequalities.

Strategy of the Sixth Plan. The strategy of the Sixth Plan was within the framework of the Fifth Plan Strategy. As the Sixth Plan noted: "The basic task of economic planning in India is to bring about a structural transformation of the economy so as to achieve a high and sustained rate of growth, a progressive improvement in the standard of living of the masses leading to the eradication of poverty and unemployment and provide the material base for a self-reliant socialist economy." It admitted "the limited effectiveness of 'trickle down' effect." But emphasised a substantial acceleration in the overall rate of growth of the economy alongwith a sharper redistribution focus in raising the share of the poorer sections in national income and consumption and in the utilisation of public services. Thus the main strategy of the Sixth Plan was to strengthen the infrastructure for both agriculture and industry so as to create conditions for an accelerated growth in investment, output and exports to provide increased employment opportunities and to remove poverty. As these are interrelated problems stress was laid on dealing with them through a systems approach rather than in separate compartments. This involved greater managerial efficiency and intensive monitoring in all sectors and active involvement of the people in formulating specific schemes of development at the local level and securing their speedy and effective implementation.

The strategy for the removal of poverty emphasised on (a) transferring assets and skills to the poorer sections of the society and (b) providing employment in the slack seasons of the year. The Integrated Rural Development Programme (IRDP) related to the first category and the National Rural Employment Programme (NREP) to the second category.

The IRDP had been conceived essentially as an anti-poverty programme. Since the hard core of poverty is to be found in rural areas, more than 13 per cent of the rural population was to be covered by

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The household had been taken as the basic unit for poverty eradication. The Plan assumed that of the 3,000 families to be covered in each block by IRDP during the Sixth Plan, 2,000 were to be covered by schemes relating to agriculture and allied activities, 500 by village and cottage industries, and 500 by the services sector.

Since wages of landless labour, small and marginal farmers, rural artisans, scheduled castes, scheduled tribes and socially and economical-

ly backward classes are low, there is need to implement a limited measure of land redistribution. 'A redistribution of 5 per cent of the cultivated area from holdings above 5 acres, to small farmers and agricultural labour households would have the effect of increasing income accruing to this class by 20 per cent.' The Plan aimed at raising 12 million households in the rural sector above the poverty line by adopting IRDP and other programmes.

The Plan also proposed to raise 6.1 million of the poor in urban areas above the poverty line through public redistributive services like health, education programmes.

The employment strategy of the Plan was two-fold: (i) to reduce underemployment by increasing the rate of growth of the gainfully employed; and (ii) to reduce open unemployment. During the Sixth Plan, additional employment opportunities were to be made available through a large number of development projects to be undertaken by the public and private sectors. But such opportunities were by and large to benefit the educated and the trained. Accordingly, the unorganised rural people needed special attention. Small and marginal farmers and rural artisans having some asset base were to be gainfully employed through production enhancing schemes and allied agricultural programmes like animal husbandry, fisheries, forestry, etc.

However, 50 per cent of the agricultural labour households are landless and are without assets. They primarily depend upon wage employment for the sustenance. NREP had been proposed for such households. Under this programme, development projects and target group-oriented employment generation projects were to be closely intertwined. NREP was to be implemented as a Centrally-sponsored scheme on a 50:50 sharing basis between the Centre and the States. The Centre was to provide its share partly in cash and partly in foodgrains. Accordingly, wages were also to be paid in cash and partly in grains. Thus NREP aimed at providing employment opportunities which were to help the rural poor to get their daily bread, and planned utilisation of manpower for economic development.

To improve the quality of life of the people the Sixth Plan gave high priority to social services. Social services were to be provided through the Minimum Needs Programme (MNP) which was introduced in the Fifth Plan. For optimising benefits, the MNP was proposed to be taken as a package and related to specific areas and beneficiary groups. It also emphasised greater need for integration at the micro-level for the implementation of MNP.

Strategy of the Seventh Plan. The Seventh Plan is set within a 15-year perspective. The aim is to create by the end of the present century the conditions necessary for self-sustaining growth and to provide basic

minimum needs for all. "In more concrete terms, this means the elimination of poverty and creating conditions for near full employment, the satisfaction of the basic needs of the people in terms of food, clothing and shelter, attainment of universal elementary education, and access to health facilities for all."⁸

To attain these objectives, the overall strategy of the Seventh Plan is: (i) action to sustain and enhance the momentum of economic expansion and technological development; (ii) adoption of effective promotional measures to raise the productivity and incomes of the poorer sections of the population, poorer regions and poorer states; (iii) expansion and qualitative improvement in facilities for health, education and other basic civic amenities; and (iv) measures for bringing about a sharp reduction in the rate of population growth.

To sustain and accelerate the momentum of economic growth, substantial increases in the proportions of outlays have been made in all sectors as compared to the Sixth Plan. In order to raise productivity and promote efficiency, increased and more efficient utilisation of existing assets will be made both in agriculture and industry. The new agricultural strategy adopts a coordinated approach to irrigation, drainage and land use management of multiple cropping. Besides, the emphasis will be on effective implementation of land reforms and timely delivery of key inputs to farmers. The industrial strategy will be on modernisation, investment in balancing equipment and technology upgradation. To accelerate the growth of agriculture and industry, increased emphasis will be on investments in infrastructure so that shortages do not arise in power, transport and coal. Another plank of the Seventh Plan Strategy is the expansion and qualitative improvement in facilities for health, education and other basic amenities through the Minimum Needs Programme. The development strategy of the Plan and the pattern of growth emerging from it are expected to lead to expansion of employment opportunities and substantial reduction in poverty.⁹

A Resumé

The above analysis of the development strategy adopted in the various Indian five-year plans reveals that it has been one of balanced growth and its main constituents have been a structural transformation of the economy so as to achieve a high and sustained growth rate of the economy; a progressive improvement in the standard of living of the

⁸Government of India, Planning Commission, *The Seventh Five-Year Plan 1985-90*, Vol. I, October 1985.

⁹For details refer to the chapter 'Seventh Five-Year Plan'.

masses by eradicating poverty, unemployment and income inequalities; and providing the material base for a self-reliant economy. This strategy has been instrumental in increasing substantially industrial and agricultural output, in providing considerable infrastructural facilities and in modernising the economy. The saving and investment ratios compare favourably with even some of the developed countries. But the growth rate of national income has been lower than the target rates of the plans. The strategy has failed to bring growth with stability and social justice. It has not been successful in reducing poverty, inequalities and unemployment. The goal of a self-reliant economy is still far away.¹⁰

A NOTE ON THE WAGE-GOODS STRATEGY OF DEVELOPMENT

The wage-goods strategy of development was formulated by C.N. Vakil and P.R. Brahmanand in a book entitled *Planning for an Expanding Economy in 1956*. It was presented as an alternative to the Mahalanobis strategy. The Mahalanobis strategy was accepted by the Planning Commission and became the basis of the Second Five-Year Plan while the wage-goods strategy was not given any serious thought. The Vakil-Brahmanand strategy was the opposite of the Mahalanobis strategy. The former emphasised the rôle of wage-goods as capital while the latter laid emphasis on the role of fixed capital in economic development.

The wage-goods strategy was an extension of the Nurkesian thesis¹¹ of concealed saving potential in rural disguised unemployed in underdeveloped countries. Vakil and Brahmanand felt that an effective use could be made of the 'saving-potential' by employing the disguised unemployed at the project sites by supplying them with wage-goods consisting of only food. They argued that for every disguised unemployed worker to be transferred to project sites, there is a 'wage-goods gap.' This gap reflects the difference between the old real wage rate and new real wage rate of the disguised unemployed worker. To bridge it, Vakil and Brahmanand suggested the creation of forced saving potential by the planning authority. They contended that if initially arrangements were made for the wage-goods of the first batch of workers, then it would be possible to give employment not merely to these workers, but to double their number. This means that the total increase in employment is a multiple of the initial increase in employment. In order to prove this, they devised a formula and called it the 'wage-goods multiplier'.

¹⁰For a detailed explanation of the various aspects of the strategy referred to in this para, students should read 'A Critical Appraisal' in Ch. 66.

¹¹For a detailed analysis, refer to Ch. 15.

The wage-goods strategy was based on certain assumptions. First, the wage-goods consisted exclusively of food. Second, labour could produce capital goods without the help of other factors of production. Third, it was assumed that the average consumption of workers working on the farms could be kept constant after the disguised unemployed workers were transferred to the construction sites and that what the transferred workers were consuming on the farms could be siphoned off to feed them at the project sites. Fourth, for the successful operation of the wage-goods multiplier, the wage-goods gap must be filled up. Lastly, the disguised unemployed must be engaged on project sites near their homes and not put to work in factories or in the capitalist sector away from the family farms.

Jagdish Bhagwati and S. Chakravarthy¹² have been very critical of the wage-goods strategy of Vakil and Brahmanand on the following grounds. First, the operational part of this strategy was based on the assumption of the existence of the disguised unemployed in agriculture. But the authors did not subject this concept to any critical investigation nor did they try to measure the extent of disguised unemployment in India. Secondly, "they did not pay any attention to the possibility that the production process may not be of the simple Austrian type that they had assumed, labour→capital goods→consumer goods. The mere availability of labour would not alone solve the problem of greater capital formation. Extra capital equipment would be needed and would need to be either produced at home or imported, hence raising the complex of issues raised earlier in connection with the Mahalanobis model."¹³ Thirdly, the deployment of surplus labour in rural construction activities cannot be entirely independent of the decisions taken elsewhere in the economy with respect to the use of scarce resources including wage-goods. Fourthly, the inclusion of only food and the exclusion of non-food items from wage-goods makes the model unrealistic. Lastly, "the social welfare function implicit in Vakil and Brahmanand's approach to planning was novel at the time, they were emphasising the need to minimise the time needed to reach full employment. Whether such an objective function constitutes an adequate social welfare function is very doubtful, but that it is an objective which needs very careful consideration is beyond doubt."¹⁴

The wage-goods strategy was not given any attention by the planners in India till the end of the Fourth Plan. It was in the Fifth Plan that this

¹² *Contribution to Indian Economy—A Survey*, 1971*

¹³ *Ibid.*, p. 15.

¹⁴ *Ibid.*, p. 16.

strategy was accepted for the eradication of poverty and unemployment in rural India, in particular with the adoption of the Food for Aid Programme in 1978.

Professor Brahmanand has amended the original wage-goods strategy discussed above by removing some of its defects and unrealistic assumptions and making it broad-based by including such factors as population distribution, monetary-fiscal policies, and extending the wage-goods to non-food items. He calls it the 'Extended Wage-goods Strategy'.¹⁵

He defines wage-goods as 'consumption necessities required for subsistence and performance of work.' These include subsistence as well as collective goods which are required by the poorest in the community. He gives a list of roughly 22 items. The production of such commodities should be expanded faster than the growth rate of population.

He emphasises the importance of capital goods in development and gives priority to the production of those capital goods which are needed for the production of wage goods.

The supply of the "integrated wage-goods complex"—wage-goods plus capital goods needed for their production—must grow at a considerably higher rate than the growth rate of population to absorb the disguised unemployed.

The net output-productivity of a unit of labour is higher than the consumption of wage-goods so that the supply of output tends to increase by the multiplier process.

The savings-income ratio can be substantially increased by adopting appropriate monetary-fiscal measures. In this extended wage-goods strategy the savings-income ratio is much higher because the capital requirements are much lower than under capital-intensive strategy. Hence the average growth rate will also be higher. Since the strategy depends on the mobilisation of savings, long-term interest rates should be kept at a high level. "But an active short-term interest rate policy is also advocated in order to reduce the incidence of commodity hoarding."

This strategy also depends on the building up of an adequate public distribution system in respect of important wage-goods to keep the price level in check. Thus it aims at avoiding inflation. For this, the money supply should grow at about the same average rate at which output and supply of wage-goods are growing.

¹⁵*Falling Economy and How to Revive It*—Presidential Address at the 60th Annual Conference of the Indian Economic Association, December 1977; and *Planning for a Futureless Economy*, November 1978.

The extended wage-goods strategy is also dependent upon a policy of population stabilisation.

Since the strategy aims at removing disguised unemployment and unemployment among the rural poor, it is egalitarian in nature.

The entire initiative for the implementation of this strategy in the form of starting economic overheads in rural areas, investing in them, providing wage-goods to workers and mobilisation of savings must come from the government.

This strategy is free from the dependence upon foreign capital of foreign technology and thus does not involve any special balance of payments problems. Thus it aims at self-reliance.

In conclusion, the extended wage-goods strategy attempts to build an analytical scheme which tries to solve the triple problem of unemployment, poverty and inequality in India.

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In conclusion, the extended wage-goods strategy attempts to build an analytical scheme which tries to solve the triple problem of unemployment, poverty and inequality in India.

Chapter 64

RESOURCE MOBILISATION IN INDIAN PLANS

MEANING

Resource mobilisation refers to the scheme of collecting funds for financing a plan. It involves the study of various internal and external sources of finance for the execution of the plan. Finance is the instrument for resource mobilisation. It is essential for the purpose of removing maladjustment between supplies and demands of goods and services in order to avoid inflation and balance of payments difficulties. If sufficient funds are not available, the achievement of physical targets becomes an impossibility. The importance of resource mobilisation in an underdeveloped country lies in curtailing consumption and augmenting savings for an accelerated investment in the community. The methods of resource mobilisation in Indian Plans for private and public sectors are as follows:

METHODS OF RESOURCE MOBILISATION

Resources available for private investment in India are corporate savings, household and cooperative savings plus net inflow of foreign loans. Financial institutions like the LIC, banks, cooperatives, land development banks, unit trust, etc., help to mobilise a large part of community savings for private investment.

For financing the public sector, there are mainly three items of resource mobilisation: (i) *Domestic budgetary resources* which include balance from current revenues; contributions of public enterprises like railways, posts and telegraphs and others; retained profits of the Reserve Bank; net market borrowings and borrowings by financial institutions like IFCI, IDBI, State electricity boards and others; small savings; State provident funds; miscellaneous capital receipts; and additional resource mobilisation in the form of fresh taxation by the Centre and the States. These are also called internal sources.

(ii) *Net Budgetary receipts corresponding to external assistance.*

(iii) *Deficit financing.*

A clear picture of mobilisation of resources can be had from a detailed study of financing the various Indian Plans.

FINANCING THE FIRST PLAN

In the First Plan, the actual total investment in the public sector was Rs 1,960 crores as against the estimated outlay of Rs 2,378 crores. The resource mobilisation scheme of the Plan is shown in Table 64.1.

The pattern of finance in the public sector shows that 73.4 per cent of the financial resources came from budgetary sources, 17 per cent through deficit financing and 9.6 per cent from external resources. Surplus on current revenue and railway surplus provided 38.3 per cent of the Plan resources while loans from the public accounted for 10.5 per cent of the total resources. This was an outstanding achievement of the First Plan, for public borrowing had exceeded by about Rs 90 crores the original target of Rs 115 crores. Similarly, small savings increased by Rs 34 crores and miscellaneous capital receipts by Rs 43 crores from the original targets of Rs 270 and 135 crores respectively. The total amount of external assistance received was Rs 296 crores out of which Rs 188 crores were actually utilized while Rs 108 crores were carried forward to the Second Plan. Deficit financing was resorted to in a very cautious manner. As a result, the actual amount of deficit financing exceeded the postulated by Rs 43 crores only.

TABLE 64.1. FINANCIAL RESOURCES OF THE FIRST PLAN

Item	Rs crores	Percentage
Taxation and surpluses of railways	752	38.3
Public loans (net)	205	10.5
Small savings unfunded debt	34	1.8
Miscellaneous capital receipts (net)	43	2.1
External assistance	188	9.6
Deficit financing	111	17.0
Total	1,960	100.0

Source: *Third Five-Year Plan*

The shortfall of public expenditure by Rs 418 crores as well as the non-utilization of the total external assistance during the period were attributed to defective planning, delays in the execution of Plan projects, shortage of equipment and materials, and lack of trained personnel. On the whole, the modest First Plan did not face any financial difficulties and was mainly financed through internal resources, the contribution of external assistance being 9.6 per cent of the total. Private sector investment exceeded the Plan estimate by Rs.

the actual total investment in the private sector being Rs 1,800 crores as against Rs 1,600 crores envisaged during the Plan.

FINANCING THE SECOND PLAN

The original Second Five-Year Plan proposed an outlay of Rs 4,800 crores. But subsequently the Plan had to be pruned and the actual expenditure came up to Rs 4,672 crores. The details of the resource mobilization scheme are given in Table 64.2.

During the Second Plan the aggregate financial outlay in the public sector was below the original estimates by Rs 130 crores. There were wide divergencies between the original and actual outlays. The balance available from current revenues had shown a net fall of Rs 340 crores. It was only Rs eleven crores, as against Rs 350 crores as originally estimated. Small savings had also been less by Rs 80 crores than envisaged earlier. However, net loans from public exceeded the estimate by Rs 56 crores. But deficit financing had been within proper limits. It amounted to Rs 954 crores as against Rs 1,200 crores set originally. Even this much of deficit financing was instrumental in raising prices and indicated the limitations of this method of financing. External assistance exceeded the original target of Rs 800 crores by Rs 250 crores but it failed to ease the balance of payments position. "Stringent restrictions had to be imposed on less essential imports. Foreign exchange reserves had to be drawn down by Rs 600 crores. In addition, external assistance of the order of Rs 872 crores was utilized in the public as well as private sectors, besides commodity imports of Rs 534 crores under the PL 480 assistance and net drawals from the International Monetary Fund of the order of Rs 55 crores."¹

TABLE 64.2. FINANCIAL RESOURCES OF THE SECOND PLAN
(in Rs crores)

Item	Original	Percentage	Actual	Percentage
Balance from current revenues (excluding additional taxes)	350	7.3	11	0.2
Contribution of railways	150	3.1	167	3.6
Loans from public (net)	700	14.6	756	16.1
Small savings (net)	500	10.4	422	9.0
Provident fund and other miscellaneous capital receipts	250	5.2	261	5.6
Additional taxation	450	9.4	1,052	22.5
External assistance	800	16.7	1,049	22.5
Deficit financing	1,200	25.0	954	20.4
Uncovered gap	400	8.3	—	—
Total	4,800	100	4,672	100

¹Third Five-Year Plan., p. 34.

The Second Plan target for 850 crores (Rs 450 crores plus Rs 400 crores of uncovered gap) of additional taxation was substantially exceeded. Additional taxation of Rs 1,052 crores both by the Centre and State was raised. However, tax collection as a percentage of national income could only rise from 7.5 per cent to 8.9 per cent.

Unlike the First Plan, external assistance accounted for 22.5 per cent of the financial resources during Second Plan. Deficit financing (20.4 per cent) along with heavy taxation (22.5 per cent) led to rise in prices. The investment target of Rs 2,400 crores in the private sector was exceeded by Rs 600 crores which showed that heavy taxation did not adversely affect private investment.

FINANCING THE THIRD PLAN

The Third Plan proposed an outlay of Rs 7,500 crores in the public sector which was raised to Rs 8,000 crores in the wake of the National Emergency. The actual investment was, however, Rs 8,577.2 crores. Table 64.3 shows the resource mobilization scheme of the Plan along with the original estimates.

TABLE 64.3 FINANCIAL RESOURCES OF THE THIRD PLAN

(in Rs crores)

Item	Original	Percentage	Actuals	Percentage
Balance from current revenues at 1960-61 rate of taxation	550	7.3	(-) 419	(-) 4.9
Contribution of railways at 1960-61 fares, freight and tariffs	100	1.3	62	0.7
Surplus from other public enterprises	450	6.0	373	4.4
Loans from the public (net)	800	10.8	823	9.6
Small savings (net)	600	8.0	565	6.6
State provident funds	265		336	
Compulsory deposits and annuity deposits (net)	—	7.2	117	8.4
Steel Equalisation fund	105		4	
Balance of miscellaneous capital receipts (net)	179		238	
Additional taxation, including measures to increase the surplus of public enterprises	1,710	22.8	2,892	33.7
Budgetary receipts corresponding to external assistance (net)	2,300	29.3	2,423	25.2
Deficit financing	550	7.3	1,133	13.2
Total	7,500	100	8,577	100

the actual total investment in the private sector being Rs 1,800 crores as against Rs 1,600 crores envisaged during the Plan.

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TABLE 64.2. FINANCIAL RESOURCES OF

Item	Original	Percent
Balance from current revenues (excluding additional taxes)	350	
Contribution of railways	150	
Loans from public (net)	700	
Small savings (net)	500	
Provident fund and other miscellaneous capital receipts	250	
Additional taxation	450	
External assistance	800	
Deficit financing	1,200	
Uncovered gap	400	
Total	4,800	

The Second Plan target for 850 crores (Rs 450 crores plus Rs 400 crores of uncovered gap) of additional taxation was substantially exceeded. Additional taxation of Rs 1,052 crores both by the Centre and State was raised. However, tax collection as a percentage of national income could only rise from 7.5 per cent to 8.9 per cent.

Unlike the First Plan, external assistance accounted for 22.5 per cent of the financial resources during Second Plan. Deficit financing (20.4 per cent) along with heavy taxation (22.5 per cent) led to rise in prices. The investment target of Rs 2,400 crores in the private sector was exceeded by Rs 600 crores which showed that heavy taxation did not adversely affect private investment.

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The Third Plan proposed an outlay of Rs 7,500 crores in the public sector which was raised to Rs 8,000 crores in the wake of the National Emergency. The actual investment was, however, Rs 8,577.2 crores. Table 64.3 shows the resource mobilization scheme of the Plan along with the original estimates.

TABLE 64.3. FINANCIAL RESOURCES OF THE THIRD PLAN

(in Rs crores)

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Compulsory deposits and annuity deposits (net)	—	7.2	117	8.4
Steel Equalisation fund	105		4	
Balance of miscellaneous capital receipts (net)	179		238	
Additional taxation, including measures to increase the surplus of public enterprises	1,710	22.8	2,892	33.7
Budgetary receipts corresponding to external assistance (net)	2,300	29.3	2,423	28.2
Deficit financing	550	7.3	1,133	13.2
Total	7,500	100	8,577	100

Over the Plan period, the total revenue receipts of the Centre, States and Union Territories rose by 100 per cent from Rs 1,718 crores in 1960-61 to Rs 3,599 crores in 1965-66. This massive increase in revenue receipts was the result of intensification of resource mobilization in the country. The yield from additional taxation exceeded the target of Rs 1,710 crores by Rs 1,182 crores. This was the outcome of the increased tax effects made by the Centre and the States. The emphasis was less on the imposition of new taxes and more on enhancing the rates and widening the coverage of existing taxes and duties. "A good part of the fresh taxation undertaken at the Centre and the States during the Third Plan period was, however, absorbed by increase in non-Plan expenditure including, among others, defence and additional emoluments and allowances to Government employees so that the contribution of additional taxation towards Plan resources was smaller than might appear from the total yield."

During the first two years of the Plan, the balance from current revenues was Rs 163 crores and Rs 56 crores respectively. But in the subsequent years there was a sizeable deterioration following the declaration of the Emergency and the consequent increase in defence and other non-Plan expenditures with the result that the net balance from current revenues was *minus* Rs 419 crores, against Rs 550 crores estimated in the Plan.

There was a shortfall in the anticipated contribution of railways by Rs 38 crores against the five-year estimate of Rs 100 crores. During the first three years, the contribution exactly matched the anticipated sum of Rs 100 crores but it declined in the last two years of the Plan due to the increase in the working expenses and revision of pay scales and allowances of the railway staff.

The next source, surpluses of other public enterprises includes besides net profits, depreciation, reserve funds and other funds of the enterprises. As against the estimate of Rs 450 crores, contributions of the enterprises were Rs 373 crores, showing a shortfall of Rs 77 crores.

Efforts to raise loans from the public had been quite successful. The original target of Rs 800 crores was exceeded by Rs 23 crores, mainly due to the authorization by the Centre to the States to float loans independently of the former after 1963.

While small savings amounted to Rs 565 crores, Rs 35 crores short of the original estimate, State Provident funds brought in Rs 336 crores. The original estimate was Rs 265 crores. This sum was exceeded by Rs 71 crores due to the introduction of compulsory provident fund scheme for all Central Government employees.

In the original financial scheme of the Third Plan, there was no provision of compulsory deposits and annuity deposits. It was in the

third year of the Plan that a compulsory deposits scheme was introduced in the form of an additional surcharge on income-tax which brought in Rs 30 crores in 1963-64 and Rs 1.6 crores in 1964-65 when it was discontinued and gave place to an income-tax annuity deposit scheme in the budget of 1964-65. This additional source along with the earlier one brought in Rs 117 crores during the Plan.

The net accrual from the Steel Equalisation Fund was placed at Rs 105 crores. In the first three years of the Plan, the contribution from this source was Rs 23 crores. On 1 March 1964, the surcharge on iron and steel was abolished, as a result no adjustments were to be made with regard to new transactions. Therefore, the collections of the arrears of the previous surcharge on iron and steel in the last two years of the Plan came to Rs 11 crores, thereby making a total contribution of the Fund to Rs 34 crores.

'Balance of miscellaneous capital receipts' is a highly variable item which includes entries in the capital budget on account of numerous deposits, funds, loans, advances, States trading etc. Over the Plan period, the net out-turn was Rs 238 crores as against Plan estimate of Rs 170 crores. It was expected that "the non-Plan capital disbursements would be kept down to the minimum and recoveries in respect of arrears of outstanding loans and advances would be speeded up." These expectations were fully materialised.

In the original estimates, net budgetary receipts against external assistance had been placed at Rs 2,200 crores, but the actual amount of net foreign aid utilization was Rs 2,423 crores, being 28.2 per cent of the total outlay.

Lastly, the limit of deficit financing placed at Rs 550 crores was exceeded by Rs 583 crores, the actual amount of deficit financing being Rs 1,133 crores.

On the whole, the resource mobilisation scheme of the Third Plan was satisfactory. Efforts to boost up taxation, voluntary and compulsory savings, provident funds and public loans were quite successful. But deficit financing was more than double the original estimate. This was, however, unavoidable in an economy operating under emergency conditions. Inflation also led to and fed itself on higher cost of capital equipment, materials, wages, etc., thus necessitating higher doses of deficit financing.

FINANCING THE ANNUAL PLAN

The resources mobilisation scheme of the Annual Plans for 1966-69 along with their original estimates is given in Table 64.4.

The years 1966 to 1968 of the Annual Plan were of great stress for the

TABLE 64.4. FINANCING OF THE ANNUAL PLANS (1966-69)

(Rs. in crores)

Item	Original Estimates	Actual Estimates	Percentage
Balance from current revenues at 1965-66 rates	866	346	5.2
Surplus of public enterprises including railways	587	401	6.1
Additional taxation including measures to increase the surplus of public enterprises	1,060	902	13.6
Loans from public (net)	571	725	10.9
Small savings	391	355	5.4
State provident funds and other miscellaneous capital receipts (net)	420	810	12.2
Budgetary receipts corresponding to external assistance (net)	2,435	2,410	36.4
Deficit financing	335	676	10.2
Total	6,675	6,625	100.0

economy. Failure of harvests for two consecutive years 1965 to 1967 and decline in the growth rate of industrial production and the rising price level put a heavy strain on the resources available for the two years. Balance from current revenues was Rs 346 crores which was much below the original estimates by Rs 520 crores. Rather, the non-Plan expenditure increased because of increases in dearness allowances of the Government employees, higher cost of Government purchases, and of interest on foreign loan due to devaluation, and the grant of food subsidies.

The deficit of the railways was minus Rs 120 crores which increased by Rs 56 crores more than the original estimate, due to the increase in the working expenses as a consequence of rising cost of material and grant of higher dearness allowances to employees, and the failure of the anticipated increase in railway traffic to materialise. Underutilisation of capacity coupled with higher dearness allowances and cost of materials resulted in the fall of Rs 130 crores in the surpluses of other public enterprises. They were Rs 521 crores.

Additional taxation also fell short of the anticipated amount of Rs 1,060 crores by Rs 158 crores. It was Rs 902 crores. Subscriptions to market loans were Rs 725 crores which were higher by Rs 154 crores. Collections from small savings were Rs 355 crores and were lower by Rs 36 crores. Accretions to State Provident Funds and miscellaneous

capital net receipts were Rs 810 crores and were higher by Rs 340 crores over the original estimate due to larger inflow of deposits and debts at the Centre and substantial depletion of food stock in the States. Though budgetary resources corresponding to external assistance were Rs 2,410 crores as compared with the original estimate of Rs 2,435 crores, yet in reality they were lower by Rs 341 crores adjusted for devaluation.

The actual amount of deficit financing was Rs 676 crores against the estimated sum of Rs 335 crores for the three Annual Plans. Surprisingly, the First Annual Plan had no provision for deficit financing in its resource mobilisation scheme and in the Second Annual Plan the provision was made for a very modest amount of Rs 28 crores. But the actual amount of deficit financing was Rs 189 crores and Rs 224 crores respectively for the two years.

FINANCING THE FOURTH PLAN

The total outlay envisaged in the Fourth Plan was Rs 24,882 crores. Of this, the public sector outlay was Rs 15,902 crores and the private sector outlay was Rs 8,980 crores. The resource mobilisation scheme of the Plan is given in Table 64.5.

As usual, a number of defects and shortcomings are to be found in the resource mobilisation scheme of the Fourth Plan. As a result, a number of items were overestimated while others were underestimated. We attempt a brief appraisal of the financial scheme of the Plan with reference to Table 64.5.

According to the Draft Fifth Plan, the total outlay of the Fourth Plan was expected to be Rs 16,160 crores, Rs 258 crores higher than the original estimate of Rs 15,902 crores. However, making allowance for the rise in prices, the total resources in real terms were to show a significant shortfall as compared to the original estimates.

In the original estimates, the balance from current revenues at 1968-69 rates was estimated at Rs 1,673 crores. In actuality, it was (minus) Rs 236 crores. The main reasons were large defence expenditure, additional pay and dearness allowances to government employees, food subsidy, relief to Bangladesh refugees, larger outlay on drought and flood relief, etc.

On account of the expansion of Reserve Bank credit and the resultant increase in its income-yielding assets, and the high rate of return on these assets, the retained earnings (profits) of the Reserve Bank were Rs 296 crores as against Rs 202 crores originally estimated, showing an additional saving of Rs 94 crores.

The Posts and Telegraphs also earned Rs 93 crores more than the original estimates of Rs 225 crores.

In the original estimates of the Fourth Plan, Rs 1,280 crores were expected as profits from other public enterprises. These were finally estimated at only Rs 801 crores. In the case of railways (*minus*) Rs 165 crores had been calculated in the final estimates.

In the original estimates of the Fourth Plan, public borrowings (by the Centre and State Governments, financial institutions, and Centre and State enterprises) had been placed at Rs 1,820 crores. In the final

TABLE 64.5. FINANCIAL Resources for the FOURTH PLAN

<i>Item</i>	<i>Original estimates</i>	<i>Latest estimates</i>
Balance from current revenues at 1968-69 rates of taxation	1673	-236
Contribution of public enterprises at 1968-69 fares, freights and tariffs:		
(a) railways	265	-165
(b) posts and telegraphs	225	318
(c) IDC, ARC, REC, DVC, and central power generation	259	181
(d) others	1,280	801
Retained profit of Reserve Bank	202	296
Net market borrowings of central and state governments	1,415	2,135
Borrowings by financial institutions:		
(a) FCI	155	—
(b) others	250	177
Small savings	769	1,162
Annuity deposits, compulsory deposits, prize bonds, etc.	(—) 104	(—) 98
State provident funds	660	874
Net mica, capital receipts	1,685	1,455
Additional resources mobilisation...	3,198	4,280
Loans from LIC etc., and state enterprise gross market borrowings	506	833
Net budgetary receipt corresponding to external assistance	2,614	2,087
Deficit financing	850	2,060
Aggregate resources	15,902	16,160

estimates, Rs 2,312 crores were expected from this source. Similarly, Rs 1,162 crores and Rs 874 crores were expected respectively from small savings and State Provident Funds as against Rs 769 crores and Rs 660 crores envisaged originally. Thus these two sources pointed towards increase of Rs 393 crores and Rs 214 crores respectively.

In the scheme of resource mobilisation, deficit financing to the tune of Rs 850 crores had been underestimated as usual. In their enthusiasm to stick to a moderate dose of deficit financing, the planners seemed to have forgotten the past in this respect. In the Third Plan, deficit financing was fixed at Rs 550 crores but the actual amount was more than double, being Rs 1,133 crores. In the three Annual Plans (1966-69), it was Rs 676 crores as against the estimated sum of Rs 335 crores. In fact, deficit financing is always a guess work, for all deficits in the different sources of financing a plan are met through this source. The actual amount of deficit financing, however, depends upon the prevailing economic trends. For instance, the *Economic Survey* for 1974-75 placed it at Rs 2,889 crores whereas the Draft Fifth Plan estimated it at Rs 2,060 crores.

Since the level of taxation in the economy was already high, the sum of Rs 3,198 crores originally envisaged was not advisable. It was reduced to Rs 2,834 crores by the Ministry of Finance in the middle of 1970. Again, it was raised to Rs 3,154 crores in the mid-term appraisal of the Plan. In the final estimates, additional resources mobilisation had been placed at Rs 4,280 crores. No doubt, India is the least taxed country where taxation was about 13 per cent of the national income in 1968-69, yet even this tended to affect the economy adversely. Indirect taxes ranging from 25 to 50 per cent of the prices of most commodities accentuated inflationary pressures. The opinion of Shri P.C. Bhattacharya, the ex-Governor of the Reserve Bank of India, that taxation in India far from curbing inflation has aggravated it, merits consideration.

The total budgetary receipts corresponding to external assistance were estimated at Rs 2,614 crores. In the final estimates they had been placed at Rs 2,567 crores exclusive of the Soviet wheat loan. Even if the amount of wheat loan was included, external assistance during the period would be significantly lower than originally planned.

FINANCES, THE FIFTH PLAN

The total outlay proposed for the public sector in the Fifth Plan has been estimated at Rs 19,361 crores.

The total outlay can now be fixed at around Rs 18,000 crores.

The Posts and Telegraphs also earned Rs 93 crores more than the original estimates of Rs 225 crores.

In the original estimates of the Fourth Plan, Rs 1,280 crores were expected as profits from other public enterprises. These were finally estimated at only Rs 801 crores. In the case of railways (*minus*) Rs 165 crores had been calculated in the final estimates.

In the original estimates of the Fourth Plan, public borrowings (by the Centre and State Governments, financial institutions, and Centre and State enterprises) had been placed at Rs 1,820 crores. In the final

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Annuity deposits, compulsory deposits, prize bonds, etc.	(—) 104	(—) 98
State provident funds	660	874
Net m/s, capital receipts	1,685	1,455
Additional resources mobilisation...	3,198	4,280
Loans from LIC etc., and state enterprise gross market borrowings	506	833
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Deficit financing	850	2,060
Aggregate resources	15,902	16,160

estimates, Rs 2,312 crores were expected from this source. Similarly, Rs 1,162 crores and Rs 874 crores were expected respectively from small savings and State Provident Funds as against Rs 769 crores and Rs 660 crores envisaged originally. Thus these two sources pointed towards increase of Rs 393 crores and Rs 214 crores respectively.

In the scheme of resource mobilisation, deficit financing to the tune of Rs 850 crores had been underestimated as usual. In their enthusiasm to stick to a moderate dose of deficit financing, the planners seemed to have forgotten the past in this respect. In the Third Plan, deficit financing was fixed at Rs 550 crores but the actual amount was more than double, being Rs 1,133 crores. In the three Annual Plans (1966-69), it was Rs 676 crores as against the estimated sum of Rs 335 crores. In fact, deficit financing is always a guess work, for all deficits in the different sources of financing a plan are met through this source. The actual amount of deficit financing, however, depends upon the prevailing economic trends. For instance, the *Economic Survey* for 1974-75 placed it at Rs 2,889 crores whereas the Draft Fifth Plan estimated it at Rs 2,060 crores.

Since the level of taxation in the economy was already high, the sum of Rs 3,198 crores originally envisaged was not advisable. It was reduced to Rs 2,834 crores by the Ministry of Finance in the middle of 1973. Again, it was raised to Rs 3,154 crores in the mid-term appraisal of the Plan. In the final estimates, additional resources mobilisation had been placed at Rs 4,280 crores. No doubt, India is the least taxed country where taxation was about 13 per cent of the national income in 1968-69, yet even this tended to affect the economy adversely. Indirect taxes ranging from 25 to 50 per cent of the prices of most commodities accentuated inflationary pressures. The opinion of Shri P.C. Bhattacharya, the ex-Governor of the Reserve Bank of India, that taxation in India far from curbing inflation has aggravated it, merits consideration.

The total budgetary receipts corresponding to external assistance were estimated at Rs 2,614 crores. In the final estimates they had been placed at Rs 2,087 crores exclusive of the Soviet wheat loan. Even if the amount of wheat loan was included, external assistance during the Plan period would be significantly lower than originally envisaged.

FINANCING THE FIFTH PLAN

The total outlay proposed for the public sector in the final Fifth Five-Year Plan had been estimated at Rs 39,303 crores.^{*} The estimates

^{*}The actual outlay had been Rs 39,426.2 crores. Its item-wise breakdown is not yet available.

of financial resources for the Fifth Plan are given in Table 64.6.

The scheme of resources mobilisation of the Fifth Plan reveals that 81.8 per cent of the total resources required for financing the Plan were proposed to be raised through domestic budgetary resources, 14.8 per cent through external assistance, and 3.4 per cent through deficit financing. Details of the various resources are given below:

The balance from current revenue at 1973-74 rates of taxation for the Plan period had been estimated at Rs 4,901 crores.

Surpluses of public enterprises at 1973-74 fares, freights and tariffs had been estimated at Rs 849 crores. In the case of railways, the figures had been estimated at *minus* Rs 1,818 crores. The sharp deterioration in the contribution of railways had been attributed to slow growth of traffic, increase in working expenses due to revision of emoluments of railway employees, and rise in the prices of fuel, stores, etc., and higher interest payments.

The contribution of posts and telegraphs at 1973-74 rates was estimated at Rs 380 crores. This reduced contribution was due to the impact of revision of emoluments of postal employees and increased cost of materials needed by the posts and telegraphs department.

The contribution of other public enterprises had been estimated at Rs 2,287 crores. The deterioration in the contribution was also due mainly to sharp increase in establishment costs and higher prices of fuels, spares and other materials.

Net market borrowings were expected to yield Rs 5,879 crores or 15 per cent of the total resources. But the actual net market borrowings exceeded the original estimates. They were Rs 6,537 crores. This was due to the tendency of the black money holders to turn it into white money.

Small savings had been estimated at Rs 2,022 crores. They were more than fulfilled during the Plan period because of the incentives provided in the taxation proposals. The actual amount of small savings was Rs 2,475 crores.

Net receipts from State provident funds were estimated at Rs 1,987 crores. These estimates were almost fulfilled on account of the payment into provident funds of the first instalment of the DA impounded in 1976 under the extended scheme of compulsory savings, together with interest thereon. The actual amount from this item was Rs 1,947 crores.

Besides market borrowings, the State Governments also borrow from the LIC for housing, water supply and sewerage schemes, and from the REC for rural electrification. Such loans had been estimated at Rs 628 crores for the Plan period.

Miscellaneous capital receipts "reflect the net result of receipts and disbursements under a number of budget heads. The major sources of

TABLE 64.6 FINANCING OF THE FIFTH PLAN OUTLAY

Item	Revised plan Rs crores	Per cent
Balance from current revenues at 1973-74 rates of taxation	4,901	12.5
Gross surplus of public enterprises at 1973-74 fares, freights and tariffs	849	2.2
(a) railways	—1,813	
(b) posts and telegraphs	380	
(d) others	2,287	
Net market borrowings	5,879	15.0
Small savings	2,022	5.1
State provident funds	1,987	5.1
Net term-loans from financial institutions	628	1.6
Miscellaneous capital receipts (net)	556	1.4
Additional resources mobilisation	14,693	37.4
(a) Centre	8,494	
(b) States	6,199	
Borrowings against utilization of foreign exchange reserves	600	1.5
Net external assistance	5,834	14.8
Deficit financing	1,354	3.4
Total	39,303	100.0

Source: *Fifth Five-Year Plan, 1974-79*

receipt are loan recoveries from households, special deposits by the Employees' Provident Funds and other non-Government Provident Funds and net accretion to other deposits and funds, while the major disbursements are loans for non-Plan purposes and capital outlay outside the Plan, including outlay on State trading. The estimates for 1976-77 also take into account special borrowings of Rs 480 crores from the Reserve Bank against compulsory deposit.¹ The aggregated net miscellaneous capital receipts over the Plan period had been calculated at Rs 556 crores. But the actual receipts were much higher, being Rs 7,319 crores exclusive of special borrowings from the Reserve Bank against compulsory deposit.

The measures adopted by the Central and State Governments and their enterprises for additional resource mobilisation had been estimated to yield Rs 14,693 crores over the Plan period. To achieve the financial target of Rs 14,693 crores, the Plan document laid emphasis on certain specific measures: (a) More reliance on indirect taxes in order to curb conspicuous consumption, to promote economic use of scarce resources, and to mop up windfall profits in certain sectors. (b) Rationalisation of the pricing policies of public enterprises in order to

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TABLE 64.6 FINANCING OF THE FIFTH PLAN OUTLAY

Item	Revised plan Rs crores	Per cent
Balance from current revenues at 1973-74 rates of taxation	4,902	12.5
Gross surplus of public enterprises at 1973-74 fares, freights and tariffs:	849	2.2
(a) railways	-1,818	
(b) posts and telegraphs	381	
(c) others	2,287	
Net market borrowings	5,879	15.0
Small savings	2,022	5.1
State provident funds	1,987	5.1
Net term-loans from financial institutions	628	1.6
Miscellaneous capital receipts (net)	556	1.4
Additional resources mobilisation	14,673	37.4
(a) Centre	8,494	
(b) States	6,179	
Borrowings against utilization of foreign exchange reserves	(60)	1.5
Net external assistance	5,834	14.8
Deficit financing	8,354	3.4
Total	39,303	100.0

Source: *Fifth Five-Year Plan, 1974-79*

receipt are loan recoveries from households, special deposits by the Employees' Provident Funds and other non-Government Provident Funds and net accretion to other deposits and funds, while the major disbursements are loans for non-Plan purposes and capital outlay outside the Plan, including outlay on State trading. The estimates for 1976-77 also take into account special borrowings of Rs 4,611 crores from the Reserve Bank against compulsory deposit.¹ The aggregated net miscellaneous capital receipts over the Plan period had been calculated at Rs 556 crores. But the actual receipts were much higher, being Rs 7,319 crores exclusive of special borrowings from the Reserve Bank against compulsory deposit.

The measures adopted by the Central and State Governments and their enterprises for additional resource mobilisation had been calculated to yield Rs 14,673 crores over the Plan period. To achieve the financial target of Rs 14,673 crores, the Plan documents had employed certain specific measures: (a) More reliance on indirect taxes if under "soft" conspicuous consumption, to generate revenue like excise monies, and to stop up unutilised profits in certain firms; (b) Revaluation of the pricing policies of public sector

bring prices in better alignment with costs. (c) Greater reliance on agricultural taxation and revision of irrigation rates, road transport fares, and electricity tariffs by State Governments to augment their resources.

There was no provision for borrowing against utilisation of foreign exchange reserves in the Draft Fifth Plan. Since the foreign exchange position was quite comfortable and the reserves had increased substantially during the last few years, Rs 600 crores were proposed in the final plan to be withdrawn from these reserves during the last two years of the Plan. Actually Rs 758.3 crores were withdrawn during the last three years of the Plan.

Net external assistance for the Fifth Plan had been estimated at Rs 5,834 crores which comes to 14.8 per cent of the total outlay. But the actual amount of net external assistance during the Plan period was less than that, being Rs 3,539 crores.

In the Draft Fifth Plan, the amount of deficit financing had been fixed at Rs 1,000 crores which was raised to Rs 1,354 crores in the final document of the Plan. But the actual amount of deficit financing for the first four years of the Plan was Rs 1,763 crores. It was Rs 1,602 crores in the last year of the Plan 1978-79, thereby showing an overall amount of Rs 3,365 crores for the entire Plan period.*

*For the resource mobilisation scheme of the Sixth Plan, 1980-85, refer to the next chapter.

Chapter 65

SIXTH FIVE-YEAR PLAN 1980-85

The Sixth Five-Year Plan, 1980-85, was formally launched with the budget for 1980-81. The Draft Plan-Frame was released in September 1980 and the Draft Sixth Five-Year Plan, 1980-85, in February 1981. The Plan envisaged an aggregate outlay of Rs 1,72,210 crores. Of this, the public sector outlay was estimated at Rs 97,500 crores and the private sector outlay at Rs 74,710 crores. The GDP was estimated to grow at the annual rate of 5.2 per cent and the per capita income at 3.3 per cent annum.

OBJECTIVES

The main objectives of the Sixth Plan were.

- (i) a significant step-up in the rate of growth of the economy, the promotion of efficiency in the use of resources and improved productivity;
- (ii) strengthening the impulses of modernisation for the achievement of economic and technological self-reliance,
- (iii) a progressive reduction in the incidence of poverty and unemployment;
- (iv) a speedy development of indigenous sources of energy, with proper emphasis on conservation and efficiency in energy use,
- (v) improving the quality of life of the people in general with special reference to the economically and socially handicapped population, through a minimum needs programme whose coverage is so designed as to ensure that all parts of the country attain within a prescribed period nationally accepted standards;
- (vi) strengthening the redistributive bias of public policies and services in favour of the poor contributing to a reduction in inequalities of income and wealth;
- (vii) a progressive reduction in regional inequalities in the pace of development and in the diffusion of technological benefits;
- (viii) promoting policies for controlling the growth of population through voluntary acceptance of the small family norm;
- (ix) bringing about harmony between the short- and the long-term goals of development by promoting the protection and improvement of

value added by the end of the Plan (1984-85). Commodity-wise foodgrains were estimated to increase from 128 million tonnes in 1979-80 to 154 million tonnes in 1984-85; sugarcane from 176 million tonnes to 215 million tonnes, oilseeds from 10.2 million tonnes to 13 million tonnes; cotton 7.3 million bales to 9.2 million bales; and jute and mesta 7.5 million bales to 9.1 million bales over the Plan period. To achieve these targets, the agricultural policy during the Sixth Plan was: (a) to consolidate the gains already achieved; (b) to accelerate the pace of implementation of land reforms; (c) to extend the benefit of new technology to more farmers, cropping systems and regions; (d) to promote greater farm management efficiency through concurrent attention to cash and non-cash inputs; (e) to make agricultural growth not only an instrument of maintaining an effective national food security system but also a catalyst of income and employment generation in rural areas; (f) to promote scientific land water-use patterns based on consideration of ecology, economic energy, conservation and employment generation; (g) to safeguard the interests of both producers and consumers by the needs of production, conservation marketing and distribution in an integrated manner. Besides, to sustain and expand production, a variety of inputs and services like fertilisers, manures, improved seeds, plant protection chemicals, modern implements and machinery, and agricultural 'credit are proposed to be increased considerably. During the Sixth Plan, 13.5 per cent of the total public sector outlay was spent on agricultural and allied activities (Table 65.1).

Irrigation and Flood Control. The outlay on irrigation and flood control during the Plan period was 9.9 per cent of the total Plan outlay. It was expected to increase the irrigation potential from minor, medium and major projects by 137.41 lakh hectares. The strategy of irrigation development during the Plan period was: (a) to expeditiously complete ongoing medium and major irrigation schemes as technically and financially feasible; (b) to start only a few selected projects so as to keep up the tempo of development in the Seventh Plan, as also to meet the needs of drought prone, tribal and backward areas and to remove regional imbalances; (c) to improve implementation of the programme by aiding and strengthening monitoring organisations of the projects both at the State and Central levels; (d) to plan in advance for scarce materials of construction such as cement, steel, coal, diesel, etc., required for planned implementation of medium and major irrigation works; (e) to take up work of modernisation of irrigation systems in a phased manner; (f) to introduce Warabandi on rotational distribution system on the existing and new projects; (g) to optimise benefits through the conjunctive use of surface and ground waters; (h) to strengthen Command Area Development (CAD) organisations and

authorities, and to integrate functioning of canal management authorities, CAD authorities and irrigators; (j) to ensure adequate maintenance of canals and distribution systems by making adequate financial allocations; (j) to set up a system for regularly evaluating the performance of projects by appraising the actual benefits vis-a-vis proposed; (k) to carry out detailed surveys and investigations for preparation of new project reports to be undertaken by the end of 1989-90; (l) to start investigation for a National Plan for inter-basin transfers of water from the water-surplus areas to the water-short areas; (m) to restructure the management procedures in such a way that the farmers and public in command, catchment and watershed areas fully participate in the scientific management of the water and soil resources of the areas and thereby increase terrestrial and aquatic productivity per unit of water, land and time.

Energy. The Sixth Plan accorded the high priority to the development of energy by spending 28 per cent of the total outlay on it. The development strategy of this sector was to reduce dependence on imported oil by following an appropriate pricing policies, utmost economy and maximum efficiency in the proper use of petrol, diesel and petroleum products. Some of the other features of this were: (i) To intensify efforts for the exploration and development of domestic resources of oil; (ii) to pursue vigorously the exploitation and development of coal, hydro and nuclear resources for power generation; (iii) to set up biogas plants in order to economise the use of kerosene and diesel in rural areas; and lastly, greater attention to research on the development of renewable sources of energy, particularly the use of solar energy.

Science and Technology. The Plan spent 1 per cent of the total outlay on the development of science and technology. It accepted the crucial role of science and technology as an instrument of social and economic change. The aim is to develop on a long-term basis a sound base in science, in competence and in skills. For this purpose, the strategy of the Plan was: (a) to attract and retain the best and young talent to contribute to science and technology and to achieve originality and excellence in terms of international standards; (b) to improve and transform the existing structure of science and technology for this purpose, and to establish more effective linkages in organisational form and policy framework; and (c) to identify major new areas of science and technology in special significance to the country.

Industry and Minerals. For the development of industry and minerals, the Sixth Plan spent 13.8 per cent of the total outlay. Besides emphasising optimum utilization of existing capacities and improvements in productivity, the industrial development strategy included:

(a) Substantial increase in manufacturing capacities in public and private sectors to raise the supply of consumer, intermediate and capital goods; (b) stepping up of the export of engineering goods and industrial products so as to increase foreign exchange resources substantially; (c) import of contemporary technology and the development of indigenous know-how through domestic R & D; and lastly, adoption of new strategies for the development of backward regions and to prevent concentration of industry in existing metropolitan areas.

Due to its very favourable capital-output ratio and high employment intensity in the village and small industrial sector, the Plan gave high priority to its speedy development and allocated 1.8 per cent of the total outlay to this sector. The main features of the strategy were: (i) to improve the levels of production and earnings by upgrading of skills and techniques and producer-oriented marketing; (ii) creation of additional employment opportunities by dispersal and decentralisation of industries in rural and semi-urban areas; (iii) to establish a wider entrepreneurial base by providing appropriate training and package of incentives; (iv) creation of a viable structure of village and small industries in order to progressively reduce subsidies; and lastly, to increase efforts in export promotion.

Transport. The importance of transport infrastructure for the industrial sector and the general development of the economy for a country of the size of India can hardly be over-emphasised. The Sixth Plan recognised the need for a National Transport Commission at the Centre for an effective coordination and integration of different aspects of the transport sector. Among the objectives and strategies of the national transport policy of the Plan were: (a) removal of the transport bottlenecks that have existed in the movement of industrial and agricultural goods and in the promotion of international trade; (b) creation of adequate additional capacity to match and remain ahead of anticipated traffic; (c) conservation of energy, especially diesel, to the maximum extent; (d) coordination among different user organisations for making optimum use of available capacity within the transport sector; (e) priority to the completion of ongoing projects; (f) maximum utilization of existing assets through higher productivity; (g) evolving a rational pricing structure in the public sector transport undertakings so that they may run on profits and contribute adequately to the national resources; and (h) special emphasis on the transport needs of the remote and isolated areas like the North-Eastern Region. For the development of rail, road and other transport infrastructure and communications, the Sixth Plan spent 15.9 per cent of the total outlay.

Social Services. To improve the quality of life of the people, the Sixth Plan gave a very high priority to social services. Accordingly, 14.3 per

cent of the total Plan outlay was spent on this sector. Social services is a very comprehensive term which includes education, health and family welfare, housing and urban development, water supply and sanitation, welfare of scheduled castes, scheduled tribes and other backward classes, social welfare, nutrition, labour and labour welfare, etc. However, it is through the Minimum Needs Programme (MNP) that social services were to be provided to the people. The MNP was introduced in the Fifth Plan (1974-79) and includes the following components: elementary education, rural health, rural water supply, rural roads, rural electrification, housing assistance to the landless labourers, environmental improvement of urban slums, and nutrition. The Plan emphasised that "for optimising benefits, these programmes have to be taken as a package and related to specific areas and beneficiary groups." There was also greater need for integration at the micro-level where the programmes were to be implemented. Keeping in view the urgency and importance of these programmes, the Sixth Plan gave high priority in the allocation of resources by allocating Rs 5,807 crores to MNP out of Rs 14,035 crores allocated to the entire social services sector.

The Sixth Plan conceived family planning as a part of health and family welfare. Such a programme consisted of an integrated package of measures in health care, water supply, sanitation, infant nutrition, care for the aged, education and extension services. The objective of the population policy was to reduce the net reproduction rate to 1 per cent by 1995.

PUBLIC SECTOR OUTLAYS

In keeping with the broad strategy outlined above, the distribution of public sector outlay in the Sixth Plan is detailed in Table 65.1

TABLE 65.1. SIXTH PLAN PUBLIC OUTLAY 1980-85

(in Rs crores)

Head	Original	%	Actual	Total %
Agriculture and allied activities	12538.8	12.9	15003.9	13.5
Irrigation and flood control	12160.0	12.5	10925.1	9.9
Energy, science and technology	27400.6	28.1	32080.4	29.0
Village and small industries	1780.5	1.8	1951.9	1.8
Industry and minerals	13237.0	13.6	15338.1	13.8
Transport and communications	15546.3	15.9	17649.8	15.9
Social services and miscellaneous	14836.8	15.2	17872.1	16.1
Total	97500.00	100.0	110821.3	100.0

The total public sector outlay for the Plan period had been fixed at Rs 97,500 crores but the actual Plan expenditure was Rs 1,10,821 crores.

FINANCING THE SIXTH PLAN

Of the aggregate outlay of Rs 1,72,210 crores envisaged for the Sixth Plan, the public sector outlay had been estimated at Rs 97,500 crores and the balance of Rs 74,710 crores in the private sector. The estimates of original and latest financial resources in the public sector are shown in Table 65.2.

TABLE 65.2. FINANCIAL RESOURCES FOR THE SIXTH PLAN, 1980-85

(Rs crores)

S.No.	Item	Original estimates	Latest estimates	Total Per cent
1.	Balance from current revenues at 1979-80 rates of taxes	14478	1893	1.7
2.	Contribution of public enterprises	9395	5810	5.2
3.	Market borrowings	19500	22120	20.0
4.	Small savings	6463	9912	8.9
5.	State provident funds	3702	3956	3.6
6.	Term loans from financial institutions (Gross)	2722	2582	2.3
7.	Miscellaneous capital receipts (Net)	4009	7365	6.6
8.	External assistance	9929	8529	7.8
9.	Drawing down of foreign exchange reserves	1000	—	
10.	Additional resource mobilisation	21302	32970	29.7
11.	Uncovered gap/deficit financing	5000	15684	14.2
Aggregate resources		97500	110821	100.0

The scheme of financial resources for the Plan as presented in the Table 65.2 reveals that 92.3 per cent was mobilised from domestic sources and the remaining 7.7 per cent from external sources. Of the domestic resources, greater reliance had been placed on additional resource mobilisation, market borrowings and on deficit financing.

According to the latest estimates, the total Plan expenditure was Rs 1,10,821 crores as against the original target of Rs 97,500 crores.

Item-wise, the balance from current revenues at 1979-80 rates of taxation estimated at Rs 14,478 crores had been overestimated because it was Rs 1,893 crores.

The amount of Rs 9,359 crores expected as the surpluses of public enterprises was also not met because public enterprises suffered from several constraints. So they contributed Rs 5,810 crores for the Plan period.

It is the market borrowings, though kept at a very high level of Rs 19,500 crores in the financial scheme of the Plan, that exceeded by Rs 2,620 crores. They yielded Rs 22,120 crores.

So far as small savings and State and public provident funds are concerned, they exceeded because of the various saving incentives provided in the budgets during the Plan period. They yielded Rs 9,912 crores and Rs 3,956 crores as against the Plan targets of Rs 6,463 crores and Rs 3,702 crores respectively. The net miscellaneous capital receipts were of the order of Rs 7,356 crores in comparison to Rs 4,009 crores estimated in the Plan. There had been massive additional resource mobilisation of over Rs 32,970 crores against the Plan target of Rs 21,302 crores.

The inflow of foreign resources comprising net external assistance, external commercial borrowings and IMF Extended Fund Facility was Rs 8,529 crores against the original estimate of Rs 10,929 crores. In the scheme of resource mobilisation, deficit financing had been estimated at Rs 5,000 crores. But this had been underestimated because the deficit financing during the Plan period was of the order of Rs 15,684 crores.

However, there had been one principal flaw in the financial scheme of the Plan. The original financial resources of the Sixth Plan had been estimated at 1979-80 prices and not at 1980-81 prices, the year in which the Plan was launched. During this period of one year, prices rose by 16 per cent. It means that the cost of ongoing projects had risen and that the Plan outlay was much lower in real terms. Thus if allowance were made for the price rise during the Plan period, the Sixth Plan outlay of Rs 1,10,821 crores estimated now would fall short of the original target by about 20 per cent at 1979-80 prices.

Chapter 66

THE PATTERN OF INVESTMENT IN INDIAN PLANS

The pattern of investment refers to the allocation of investment among the various sectors of the economy. The pattern of investment in a plan is determined by its scheme of priorities. The planning authority decides the pattern of investment in keeping with the scheme of priorities in a plan. It determines whether priority is to be given to agricultural or industrial development, or to small or large scale industries, or to power, or transport, or social services. It is on these considerations that the pattern of investment is determined in a plan. Thus the pattern of investment is the first important step in formulating a development plan.

The pattern of investment in the various five-year Plans of India is shown in Table 66.1.

THE FIRST PLAN

The table reveals that the pattern of investment in the First Plan was to create the necessary economic and social overheads like power, transport, public health, education, etc., and to develop agriculture.

Accordingly, the highest priority was given to agriculture including irrigation on which 31 per cent out of the total outlay of Rs 1,960 crores was made. This was to make up the deficit in foodgrains and raw materials created by the partition, and ultimately to achieve self-sufficiency in them to meet the future requirements of the rising population and expanding industrial sector of the economy. Next in order of priorities were investment on transport and communications (27 per cent) and social services (23 per cent).

The main defect of the pattern of investment in the First Plan was the low priority given to the development of industries and minerals on which only 6 per cent of total investment was made. This led to serious difficulties of foreign exchange, industrial raw materials, rising prices, etc. during the Second Plan.

THE SECOND PLAN

To correct this imbalance in the pattern of investment of the First Plan, the investment on industries and minerals was of the order of 20 per cent

The Pattern of Investment in Indian Plans

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TABLE 66.I. PATTERN OF INVESTMENT IN INDIAN PLANS IN PERCENTAGE

Head	Ist Plan (1951-56)	II Plan (1956-61)	III Plan (1961-66)	Awest Plan (1966-69)	IV Plan (1969-74)	V Plan (1974-79)	VI Plan (1979-85)
1. Agriculture and allied sectors	15	11	13	17	15	12	13
2. Irrigation and flood control	16	9	8	7	9	10	10
3. Power	13	10	15	18	19	19	29
4. Village and small industries	2	4	3	2	1	1	2
5. Industries and minerals	4	20	20	23	18	23	14
6. Transport and communication	27	28	25	18	19	17	16
7. Social services and miscellaneous	23	18	16	15	19	18	16
Total	100	100	100	100	100	100	100

out of the total outlay of Rs 4,672 crores during the Second Plan. This much of investment was considered essential for building a strong capital base and to increase productive and technical capacity within the economy. More attention was focused on the development of cottage and small industries to create large employment opportunities by investing 4 per cent of the total outlay on them.

For a balanced development of the economy, investments in transport, agriculture and irrigation, and social services were kept at high levels. Investment on transport and communications was 28 per cent which was the highest among all the sectors. This was essential to overcome transport bottlenecks that were expected to arise with development. Investment of the order of 20 per cent on agriculture and irrigation was essential to supply additional foodgrains for the growing population and raw materials for industrial progress. To expand facilities for training of science and technical personnel and increasing their supply in order to reduce inadequacies of administrative machinery 18 per cent of the total investment was made on them. It also included expenditure on improving health, sanitation and education.

The pattern of investment outlined above was successful in the establishment of heavy industries like steel, machine tools, machinery, heavy electricals, scientific instruments, etc. It also helped in developing the means of transport and communications a little. But production in the agriculture sector was not uniform to meet the requirements of the industrial sector. This was due to large scale dependence on uncertain monsoons. Further, cottage and small industries failed to boost the production of consumer goods, and investment on social services failed to remove administrative inadequacies. Due to large investments in the different sectors of the economy and shortages of raw materials, power and consumer goods, large amounts of foodgrains, raw materials and heavy machinery and equipment were imported which led to acute foreign exchange difficulties. Further, shortages of essential materials and commodities created severe inflationary pressures within the economy.

THE THIRD PLAN

The failure on the agricultural front and the strains and stresses experienced by the economy during the Second Plan made the planners more cautious in designing the pattern of investment for the Third Plan. Accordingly, the pattern of investment during the Third Plan was designed to increase and sustain the growth rate of over 5 per cent per annum of national income during the subsequent plans; to achieve self-sufficiency in foodgrains and increase agricultural production to meet the requirements of future industry and export; to expand basic industries like steel, chemicals, fuel and power, and to establish machine building capacity, so that the requirements of further industrialisation could be met within a period of ten years or so mainly from the country's own resources; to utilize to the fullest possible extent the manpower resources of the country and to ensure a substantial expansion in employment opportunities; and to establish progressively greater equality of opportunity and to bring about reduction in disparities in income and wealth and more even distribution of economic power.

In keeping with this pattern of investment, out of the total investment of Rs 8,576.5 crores 21 per cent was spent on agriculture and irrigation, 23 per cent on the development of small and large scale industries, 25 per cent on transport and communications, 16 per cent on social and other services, and 15 per cent on power projects. This scheme of priorities for the Third Plan emphasised specially interdependence of agriculture and industry, of economic and social development, of national and regional development, and the creation of a solid base for the expansion of exports in order to remove the dependence on external

assistance in the subsequent plans. It also placed great stress on measures for scientific and technological development and for raising the general level of productivity, removing transport bottlenecks, providing more power to agriculture and industry, expanding educational facilities at all levels, providing larger public health and family planning services, and larger employment opportunities.

Despite a broad-based scheme of priorities and balanced pattern of investment, the Third Plan experienced serious inflationary pressures and balance of payments difficulties due to shortfalls in agricultural and industrial production.

THE ANNUAL PLANS

The pattern of investment during the three Annual Plans (1966-69) was meant to remove strains in the economy arising from unprecedented and sharp fall in agricultural production in 1965-66 to 1959-60 level, and to secure a feasible growth rate without generating inflationary pressures within the economy. The emphasis was on the fuller utilization of the infrastructure already created and filling up the essential gaps in the economy to pave the way for its future development. Accordingly, agriculture and irrigation were given the highest priority when 24 per cent of the total investment of Rs 6,625.4 crores was made on them. 23 per cent of the total investment was made in the organised industrial sector with a view to expand and consolidate the industrial base of the economy. The main emphasis was to fully utilize the installed capacity and effect improvements in productive efficiency. Power and transport were each allocated 18 per cent of the total investment, the emphasis being on expanding the essential overhead facilities in keeping with the requirements of the growing economy. In the field of social services, higher investments were made on education, scientific research, family planning, water supply and sanitation schemes.

The pattern of investment during the three Annual Plans helped in uplifting the economy. Agricultural production increased, recession was controlled, strains and stresses in the economy were removed, and the tempo of development initiated in the earlier plans was kept up which paved the way for starting the Fourth Five-Year Plan.

THE FOURTH PLAN

The pattern of investment in the Fourth Plan was such as to give the highest priority to agriculture and irrigation development programmes. As such, out of the total investment of Rs 15,779 crores, 24 per cent was allocated to this sector, while the allocation to every other sector was almost uniform at 19 per cent.

Specific attention was paid in the Fourth Plan towards improving the

lot of the small cultivator, the farmer and the agricultural labourer. For this, they were provided more facilities in the form of minor irrigation, agricultural credit, inputs services, etc. The Agro-Industrial Corporation was set up to supply agricultural machinery on hire-purchase and to provide technical and other related services to the farmers. Further, a Small Farmers' Development Agency was set up in 45 selected districts to help ensure availability of inputs service and credit. Another important measure to help the small farmers was to intensify land farming through research and application of new technology to dry farming areas. Besides, the programmes started in the earlier five-year plans were continued and intensified. But the overall strategy was intensive cultivation instead of bringing additional land under cultivation.

The pattern of investment in the industrial sector aimed at dispersal of industrial activity and enterprise. For this purpose, assistance and incentives were provided by the State Governments, and disincentives and restrictions were imposed for the establishment of industries in large cities. The policy of dispersal of industries also aimed at reducing concentration of economic power and increasing employment opportunities. The pattern of investment on the development of transport and communication was so designed as to reduce transport bottlenecks and to develop transport facilities in backward areas for a balanced regional development. In the fields of social services and power generation, the schemes of the Annual Plans were continued. In the overall pattern of investment, the aim was to increase exports and reduce imports and to do away with foreign aid gradually. Priorities were fixed in such a manner as to maintain stability and progress towards self-sufficiency.

Despite allocating a very high percentage (24 per cent) of total investment to the development of agriculture and irrigation, there were shortfalls in agricultural production during the plan period. These were not due to bad weather conditions but due to technological constraints and shortfalls in the supply of chemical fertilisers and improved seeds.

THE FIFTH PLAN

The investment pattern of the Fifth Plan was in keeping with its twin objectives of removal of poverty and attainment of economic self-reliance. The guiding principles of the pattern of investment were: (i) Speedy completion of projects; (ii) full utilization of capacities and potentials already created; (iii) achievement of the inescapable minimum targets of additional capacity in the core sector; and (iv) attainment of certain minimum level of development for the economically weaker sections of society. Accordingly, out of the total investment of Rs 39,426 crores during the Fifth Plan period, 23 per cent was allocated

to industry and mining, 22 per cent to agriculture and irrigation, 19 per cent to power, 18 per cent to social services, and 17 per cent to transport and communications.

The pattern of investment designed in the Fifth Plan envisaged 4.4 per cent growth rate of gross domestic income. This necessitated a higher level of investment, higher level of efficiency, and a higher level of saving and reduction of inequalities in income and consumption levels. This called for expansion of productive employment; a national programme of minimum needs; emphasis on agriculture, key and basic industries producing goods for mass consumption; public procurement and distribution of essential consumption goods to the poor at reasonable rates; extended programme of social welfare; vigorous export promotion and import substitution, restraint on non-essential consumption, an equitable prices-wages-incomes balance, and institutional, fiscal and other measures for reduction of social, economic and regional inequalities.

The investment pattern in the industrial sector aimed at the diffusion of ownership, maximisation of employment, dispersed growth of industries and upgradation of scientific and technological capabilities through encouragement of village and small industries, development of industrially backward areas, and application of science and technology.

In the field of agriculture, the investment pattern was designed to achieve the growth rate of 3.9 per cent, of 3.6 percent in the production of foodgrains, and of 3.9 per cent of non-food crops. These targeted growth rates in agricultural production required the exploitation of high-yielding varieties of cereals and multiple cropping, greater involvement of small and marginal farmers, the application of dry farming techniques on a large scale in the SFDA and MFAL programmes, and in the drought-prone areas programme.

Since there had been an acute shortage in power generation in the Fourth Plan, the investment pattern on power development was so designed as to generate electricity at 10 to 12 per cent per annum.

THE SIXTH PLAN

The pattern of investment in the Sixth Plan was designed to achieve the targeted growth rates of 5.2 per cent in GNP and 3.3 per cent in per capita income per year. This necessitated the strengthening of the infrastructure for both agriculture and industry so as to create conditions for an accelerated growth in investment, output and exports; to provide increased employment opportunities; and to remove poverty. Further, it required vigorous efforts to secure significant improvements in the utilization of existing assets in agriculture and industry. To this end, the Plan laid great emphasis on fuller utilization of the exis-

potential and on improved functioning of the infrastructure consisting of power, coal and transport.

Accordingly, out of the total investment of Rs 1,10,821 crores estimated in the Sixth Plan, power and energy got the highest allocation of 29 per cent, next came agriculture and irrigation with an allocation of 23 per cent, followed by industry and social services, and transport and communications with 16 per cent each.

A Critical Appraisal

The pattern of investment followed in the various Five-Year Plans has resulted in all round progress in the different sectors of the economy.

There has been striking progress in the production of individual crops. Production of foodgrains has increased from 50 million tonnes in 1950-51 to 146 million tonnes in 1984-85 of oilseeds from 5 million tonnes to 13 million tonnes, of sugarcane from 6.4 million tonnes to 17.4 million tonnes, and cotton from 4.2 lakh bales to 8.5 lakh bales over the same period. This has been made possible by the introduction of high-yielding varieties of seeds, chemicals, fertilisers and pesticides, improved implements and machinery, multiple cropping, expansion of irrigation with improved water management, larger agricultural credit, suitable price for farm produce, and expenditure on research and farmers, training and education. The average growth rate in Indian agriculture has been 2.7 per cent per annum during the period of planned development which has lifted the economy from stagnation. This has been made possible by increased and judicious investments in agriculture year after year.

At the time of launching the First Plan, India had a very small industrial base. But in successive plans large allocations of investment outlays have been made for the development of the industrial infrastructure in the country. Considerable progress has been made in the growth and diversification of the industrial sector due to the industrial policy followed from time to time. Diversification of exports and the growing import substitution have been the other important effects of the investment pattern of the industrial sector. The country now produces a wide range of machinery and machine tools; metallurgical, mechanical and electrical engineering equipment; locomotives; wagons; aircraft; chemical fertilisers, etc., and a wide range of consumer goods and gadgets.

There has been a considerable increase in the production of many industrial products. The output of coal rose from 33 million tonnes in 1950-51 to 154 million tonnes in 1984-85, of steel ingots from 1.5 million tonnes to 10.8 million tonnes, of cement for 5 million tonnes to 29.5 million tonnes, and of sugar from 1.1 million tonnes to 6.1 million

tonnes. Besides, India's imports of consumer goods have virtually ceased, while that of machinery, fertilisers and other sophisticated industrial products have been considerably reduced. Even the imports of petroleum products have been reduced from 92 per cent to 63 per cent over the planning period.

The country has also made tremendous progress in the field of infrastructure. Electricity generation increased from 5.3 billion kwh in 1950-51 to 157 billion kwh in 1984-85. Transport has recorded a substantial growth over the period 1950-51 to 1984-85 both in the spread of network as well as in the output of the system. Railways have recorded a growth rate of 4.3 per cent in freight traffic and 3.7 per cent per annum in passenger traffic. The traffic at major ports has increased at the rate of 5.2 per cent per annum. Domestic airlines passenger traffic has recorded a growth rate of 10.5 per cent per annum. Road transport fleet has increased by 6.8 per cent per annum in respect of trucks and 5.4 per cent in respect of buses. The road network has expanded at an annual rate of 5.4 per cent. Shipping tonnage has increased at the rate of 11 per cent and coastal at 1.4 per cent per annum.

Facilities for general and technical education have expanded enormously. The number of recognised institutions has increased from 0.2 million to 0.7 million between 1950-51 and 1984-85. The total enrolment over the same period increased from 24 million to 132 million. The national stock of educated manpower is estimated to have increased from less than 4 million to about 48 million over the period. Extensive facilities are available for education in a variety of branches of humanities, sciences, engineering and technology.

Thus, the Indian economy has made substantial progress as far as increase in agricultural and industrial output, infrastructure, scientific, technological and entrepreneurial manpower are concerned.

Despite these spectacular achievements, the growth rates have been low. The Indian economy grew at an average rate of 3.5 per cent per annum. The compound trend rate of growth for the period 1961-62 to 1973-74 was 3.31 per cent and for the period 1973-74 to 1983-84, it was 4.01 per cent. The annual growth rate was 3.7% in 1984-85.

These slow growth rates cannot be attributed to any defect in the investment pattern but they have been the result of faulty execution of the various investment schemes. Consequently, agriculture continues to be dependent on rain and vagaries of the weather. There is idle capacity in industries. Power crisis persists. Transport bottlenecks are rampant. Poverty, inequalities and unemployment show no signs of reduction. Unfavourable balance of payments and inflationary pressures continue to be severe.

AGRICULTURAL DEVELOPMENT AND POLICY UNDER THE PLANS

AGRICULTURAL POLICY

When India launched the era of Five-Year Plans, there was no clear cut policy with regard to the development of agriculture. The emphasis till the end of the Third Plan was to use traditional techniques and skills to meet the current needs of the economy. Productive capacity was sought to be increased through the extension of irrigation, agricultural extension, and community development programmes. These measures failed to make a breakthrough in agricultural production. It was the adoption of the *New Strategy of Agricultural Development* in 1966-67 that ushered in the era of the *Green Revolution* in the country. Since then the emphasis on the agricultural policy has been to provide packages of technology, services and public policies to increase production and thereby improve the income of the farmers. We discuss below the agricultural policy in India as it evolved over the various five-year plans.

In the *First Five-Year Plan* high priority was given to agriculture, including community development. Of the total outlay of Rs 1,960 crores, 31 per cent was spent on agriculture and irrigation development. It was thus an *agriculture and irrigation Plan*. This much of investment was essential to make up the deficit in foodgrains and raw materials created by the partition of the country. The ultimate aim was to achieve self-sufficiency in them to meet the future needs of the rising population and the expanding industrial sector of the economy. The *strategy* for this was to extend irrigation facilities, to provide improved seeds, fertilisers and other inputs, and to bring organisational and institutional changes through land reforms, agricultural extension and community development programmes.

The *Second Plan* was an industries and transport plan. So only 20 per cent of the total outlay of Rs 4,672 crores was spent on agriculture, community development and irrigation, as against 31 per cent in the First Plan. Agricultural development was considered essential to supply additional foodgrains for the growing population, raw materials for the growing industrial economy, and to create larger exportable surplus for overcoming balance of payments difficulties. There was, however, little

change in the strategy for agricultural development.

Nonetheless, some modifications were made in the emphasis on agricultural crops. More emphasis was laid on the production of fruits, vegetables and such cash crops as sugarcane, oilseeds, tea, coffee, tobacco and black pepper. These were sought to be increased with a long-term perspective of a ten-year programme through the diversification of production, optimum utilization of the area under cultivation and maximum yield of the cultivated crops.

Failure on the agricultural front during the Second Plan made the planners cautious during the Third Plan. They accorded a little higher priority (20.5 per cent) to agriculture and irrigation than to industrial development (20.1 per cent). The target set during the Plan was to increase agricultural production by 30 per cent. Increase in agricultural production was considered essential to meet the food and raw material requirements of an expanding economy. It could be increased by providing adequate irrigation facilities, supplies of fertilisers, improved seeds, implements and machines, improved cropping patterns, land reclamations and soil conservation schemes. Further, the planners stressed the importance of developing the agricultural economy along cooperative lines and of a diversified rural economy which would expand non-agricultural activities along with such activities as fish, poultry, animal husbandry and dairy farming, etc.

In pursuance of this new policy of agricultural development, the *Intensive Agricultural District Programme* (IADP) or *Package Programme* was started in 1960-61 in three districts and was subsequently extended by stages to 13 other districts. This programme emphasised on an intensive effort for immediate increase in agricultural production in selected areas where, on account of the availability of irrigation and assured rainfall, conditions seemed favourable. It also included the provision for the supply of such inputs as credit, fertilisers, seeds, plant protection and minor irrigation facilities. The emphasis on the package approach and the advantage of concentrating effort in specific areas improved the performance of Indian agriculture. In 1964-65 a modified version in the form of the *Intensive Agricultural Programme* was extended to several other parts of the country. The programme was concerned with specific crops and the promotion of intensive agriculture. But it failed to bear fruit because of the low level of farm technology.

The period of three Annual Plans (1966-69) had been a turning point in Indian agriculture, for it was during this period the Green Revolution took place and the Government set up the *Central Prices Commission* to assure minimum support prices for the produce, the *Food Corporation of India* for implementing the *Food Security Scheme*, the *State Agricultural Marketing Boards* for marketing the surplus produce and the *State Agricultural Extension Services* for extension of modern agricultural practices.

iron out fluctuations in the supplies of foodgrains and their prices.

This encouraged the farmers of the Fourth Plan to evolve a new strategy of agricultural development in the light of the experience gained during the three Annual Plans. Of the total outlay of Rs 15,779 crores, 23.3 per cent was spent on agriculture and irrigation development during the *Fourth Plan*. The *Fourth Plan* had two objectives in the agricultural sphere. *First*, to maximise production; and *second*, to remedy imbalances. The *first* objective aimed at providing conditions for a sustained increase of 5 per cent per year growth in output for the entire Plan period; and the *second*, to enable the small cultivator, the farmer and the agricultural labourer in dry areas to participate in development and share its benefits. To fulfil the objectives of the Plan, foodgrains production was to be raised by 31.6 per cent, of oilseeds by 24 per cent, sugarcane (*gur*) by 25 per cent, cotton (in million bales) by 25 per cent, and jute by 19 per cent.

The policy for realizing the various production-targets in agriculture was: (i) expansion of irrigation facilities; (ii) augmenting the supply of fertilisers, plant protection materials, credit and farm machinery; (iii) exploitation of high-yielding variety and multiple cropping programmes in cereal production; (iv) intensive efforts to raise production levels of major commercial crops; improving the agricultural marketing system and to assure minimum prices for major-agricultural products; (v) increasing the intensity of cropping; (vi) coordinate research in the case of all important crops; and (vii) improvement in the utilization of existing irrigation potential. The overall strategy of production was intensive cultivation instead of bringing additional land under cultivation.

To enable small farmers to participate in agricultural development and to share its benefits, they were provided more facilities in the form of minor irrigation, agricultural credit, inputs services, and credit. A network of distribution centres was set up to enable farmers to get agricultural inputs easily, timely and adequately. The Agro-Industrial Corporation was to supply agricultural machinery on hire-purchase and provide technical and other related services to the farmers. Programmes of agricultural research, education and training were expanded in agricultural research centres and universities. A sum of Rs 85 crores had been provided for this. They were also spread among the farmers through a special Central scheme in the form of demonstration and discussion groups in 100 selected districts.

Besides, material inputs, particularly improved seeds, manures, fertilisers, implements, machinery, were provided through cooperative and State agencies. The agricultural development programmes also included measures for plant protection, minor irrigation, soil conserva-

tion, land reclamation, and programmes for special classes and areas. The last programmes included some general measures aimed at benefiting the small farmer. They were minor irrigation agricultural credit and animal husbandry. A *Small Farmers' Development Agency* was set up in 45 selected districts. "The main functions of the Small Farmers' Development Agency was to identify the problems of the small farmers in its area, prepare appropriate programmes, help to ensure availability of inputs, service and credit and evaluate the progress from time to time." Further, land reforms were implemented more vigorously to help the small farmer and the landless agricultural worker; and employment-oriented activities were started in the rural areas. A sum of Rs 115 crores had been allocated to benefit the small farmer through the above-noted schemes. This outlay did not include expenditure on land reforms and employment-generating schemes.

Another important measure to help the small farmer was to intensify dry land farming in the Fourth Plan. The programme was twofold: (i) research into improved dry farming techniques; and (ii) application of new technology to dry farming areas. Besides the existing research institutes, a new Centrally sponsored scheme with an outlay of Rs 20 crores was started for improving dry farming technology. For its application, pilot projects were started over 15,000 hectares of dry land in Rajasthan, Haryana and Gujarat. A sum of Rs 150 crores had been allocated for the development of dry land farming under the various Plan schemes.

Out of the total outlay of Rs 39,426 crores in the Fifth Plan 22.1 per cent was spent on the development of agriculture and irrigation. The Fifth Plan laid down the policy for long-term planning of the agricultural sector which centred round detailed assessment and exploitation of ground and surface water, intensification in application of new technologies in agriculture, extension mechanisms and programmes for supply of inputs, apart from attention to the special needs of problem areas and vulnerable sections of the society. Accordingly, the gross cropped area was postulated to expand by 0.7 per cent per annum in the Fifth Plan. The growth rate in the agricultural and allied sector was estimated at 3.94 per cent, that of foodgrains at 3.62 per cent, and of non-food crops at 3.94 per cent per annum.

For achieving the requisite growth rates and targets, a multi-pronged effort consisting of the following elements had been laid down in the Fifth Plan: (i) Intensification of problem-oriented research; (ii) strengthening of agricultural extension and administration; (iii) expansion of the programme of multiplication and distribution of certified seeds; (iv) increase in the consumption of chemical fertilizers and improvement in the efficiency of fertilizer use; (v) water management;

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institutional credit; (vii) development of post-harvest facilities including expansion in the role of cooperative agencies in the marketing of crops; (viii) substantial expansion of shortage to support marketing infrastructure; (ix) effective operation of an agricultural price policy providing requisite incentive for sustained and higher production; (x) execution of land reforms measures including a programme for institutional changes, concrete operational programmes, implementation machinery, people's involvement and the allocation of adequate funds for financing land reforms.

The policy for agricultural production in the Fifth Plan was based primarily on the exploitation of the high-yielding varieties of cereals and multiple cropping programme, greater involvement of the small and marginal farmers, the application of the dry farming technique on a large scale in the SFDA and MFAL programmes, and in the new drought-prone areas programme.

The small farmers and marginal farmers programmes covered irrigated agriculture as well as dry farming. In order to provide off-season employment to a large labour force, a large programme of local construction mainly in earth work was undertaken.

The integrated programme in the drought-prone areas aimed at preparing a strong production base and a drought immunisation base. The emphasis was on the development of proper fodder economy than a grain economy. This required suitable fodder and animal husbandry programmes. An important plank of the drought-prone area programme was the attempt to provide at least a minimum, say ten per cent of the cropped area in each district with irrigation support, even by bringing water from another catchment. *Jhum* prevention and proper utilisation of *jhum* lands was an important part of the agricultural development strategy of the Fifth Plan. First the ravines were established and then pilot schemes developed to reclaim the ravines.

Programmes for reclamation of alkaline, saline and acidity soils, plant protection, minor irrigation, production and distribution of high-yielding varieties of seeds and fertilizers had been given priority. Emphasis had also been placed on developing organic sources of manure and higher outlays provided for setting up bio-gas plants. Efforts were also made to accelerate the mini-kit seed programme and strengthen the extension services.

A major objective of the agricultural development programme was to ensure a substantial increase in the flow of institutional credit to small farmers, marginal farmers, and other weaker sections of the society. The investment policies and procedures of the financing institutions were suitably modified to achieve these objectives.

The agricultural policy of the Sixth Plan (1980-85) took into account

the immediate as well as long-term needs of agricultural commodities for domestic consumption and exports. 23 per cent of the total outlay was spent on agriculture and allied sectors including irrigation and flood control. The Plan aimed at a compound annual growth rate of 3.83 per cent in the gross value added in agriculture. To achieve this, the agricultural policy during the Plan was: (i) to consolidate the gains already achieved; (ii) to accelerate the pace of implementation of land reforms; (iii) to extend the benefit of new technology to more farmers, cropping systems and regions; (iv) to promote greater farm management efficiency through concurrent attention to cash and non-cash inputs; (v) to make agricultural growth not only an instrument of maintaining an effective national food security system but also a catalyst of income and employment generation in rural areas; (vi) to promote scientific land-use patterns based on considerations of ecology, economic energy, conservation and employment generation; (vii) to safeguard the interests of both producers and consumers through production, conservation, marketing and distribution in an integrated manner; and (viii) to increase employment and income of landless labourers, small and marginal farmers, rural artisans, scheduled castes and tribes, and economically backward classes through such programmes as IRDP and Special Area Development Programmes. The main strategy for crop production was based on a steady growth of foodgrains production, substantial increase in pulses production, self-sufficient in oilseeds and increased production of export-oriented crops such as tea, coffee, tobacco, spices, etc. Agricultural research and education was directed towards dry land farming, scientific land and water management, recycling of organic matter, energy management, improvement in productivity of crops like oilseeds and pulses, development of technology against pests and diseases, risk-distribution economy, post-harvest technology, agro-forestry, agro-meteorology, etc. The agricultural production strategy also included increasing the irrigation potential, improving and utilizing of irrigation potential, extension of HYV, and increasing the fertiliser consumption.¹

A Critical Appraisal of the Agricultural Policy

From the above survey of the agricultural policy adopted in the various Plans, its main features can be enumerated as under:

1. Land reforms leading to the abolition of intermediary tenures and tenancy reforms.
2. Increase in the production of foodgrains, cash and horticultural crops to meet the consumption requirements of the growing population and raw material needs of the expanding industry and for exports.
3. Spread of high-yielding varieties of inputs

¹ For the agricultural policy of the Seventh Plan, refer to the Chapter 'Year Plan'.

4. Extension of irrigation facilities and water management programmes.
5. Establishment of a system of support prices, procurement and public distribution.
6. Promotion of agricultural research, education and extension.
7. Institutional and organisational arrangements to assist small and marginal farmers, share croppers and other weaker sections in order to provide them employment, increase their incomes and alleviate poverty.
8. Diversification of allied agricultural activities such as animal husbandry and dairying, fisheries, forestry, etc.

As a result of this agricultural policy, there has been a phenomenal increase in the production of food and cash crops. For instance, the production of rice increased from 22 m. tonnes in 1950-51 to 58 m. tonnes in 1984-85, of wheat from 6.8 m. tonnes to 44 m. tonnes, of total foodgrains from 55 m. tonnes to 145.5 m. tonnes, of oilseeds from 6.9 m. tonnes to 13 m. tonnes, and of cotton from 2.9 m. tonnes to 8.5 m bales over the period..

But these achievements conceal substantial year to year variations in agricultural production caused by exogenous forces like droughts, floods, etc. This points toward the principal weakness of the agricultural policy in respect of the lack of irrigation facilities and flood control measures even after more than three decades of development planning.

Moreover, it is not that all crops have registered high increases in production, there has been stagnation or nominal increase in the production of several crops like jowar, bajra, and pulses among foodgrains, and groundnut and sesamum among oilseeds, and jute.. For instance, the annual growth rate calculated on the basis of triennial averages of production for 1949-50 to 1951-52 and 1978-79 to 1980-81 for jowar and bajra come to 2.3 per cent, of pulses 0.8 per cent, of groundnut 1.8 per cent, of sesamum (—) 0.1 per cent and jute 2.0 per cent as against 6 per cent for wheat, 4.1 per cent for maize, 3.4 per cent for cotton, and 3.3 per cent for sugarcane. Consequently, the trend growth rate of agricultural production has not been satisfactory. It was 2.7 per cent during 1950-51 to 1978-79 and was 4.3 per cent per annum during the Sixth Plan.

These growth rates have not been uniform within each region or State. Not all regions are endowed with fertile soil, effective flood control and drainage system, irrigation facilities and adequate rainfall. The performance of the States in regard to agricultural production to a large extent can be explained in terms of availability/use of important inputs like irrigation, fertilizer consumption, area under HYV, and credit availability. The Mid-Term Appraisal of the Sixth Plan (1980-85)

revealed that in Assam, Bihar, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa and Rajasthan, the availability/use of these four inputs has been generally on the lower much below the national average as against Andhra Pradesh, Gujarat, Punjab, Haryana, Tamil Nadu and Uttar Pradesh. The uneven agricultural progress in various states can also be attributed to the failure of the agricultural policy to extend modern technology, develop a technology for ecologically handicapped regions, utilize fully the irrigation potential and the potential of rainfed areas, and of the institutional framework to provide the necessary inputs to farmers.

Another weakness of the agricultural policy has been in the direction of non-implementation of land reforms. Security of tenures and ownership rights on cultivating tenants have not been conferred in the majority of States like Andhra Pradesh, Bihar, Tamil Nadu, Haryana, Punjab, etc. Similarly, laws on ceilings of agricultural land have not been implemented fully in all States. The progress of taking over and distribution of ceiling-surplus land has been very slow. The lucky few who have been distributed the ceiling-surplus land have not been provided assistance to develop the land. Except for Punjab, Haryana and Western Uttar Pradesh, no state has completed the work of consolidation of holdings. In the Southern and Eastern States and Rajasthan even a beginning has not been made.

Institutional arrangements in the form of IRDP, Special Area Development Programmes and diversification of allied agricultural activities have failed to increase employment and income of landless labourers, small and marginal farmers and other weaker sections. Huge funds are being spent on agricultural development in every Plan but a major part of the physical and financial assets has been concentrated in a few hands whereas about half of the population in rural areas still lives below the poverty line. So the agricultural policy has failed to provide growth with social justice.

This has been due to conflicts between the immediate and ultimate objectives in India's agricultural policy. On the one hand, concentrated efforts are being made to increase agricultural production in more favourable areas with assured irrigation facilities to such areas and big farmers, who are innovative and more marketable, are given all facilities and inputs. As a result, the rich are richer while the workers remain neglected and continue to live below the poverty line. There is a need to increase the marketable surplus of food and raw materials demand for food and raw materials by medium and big farms. This is being done through the application of technology on such farms. But the new wage helped to produce so much as to meet the

To avoid such conflicts and internal inconsistencies among different objectives and priorities, there is the need for a comprehensive agricultural policy statement which should take into consideration social and economic situations of different regions. It should clearly state the agrarian structure envisaged for the future, indicate the land policy, land use policy, and agricultural labour and employment policies. There should be a policy mix of production policy, credit policy, technological policy, and policy with regard to organisational and institutional arrangements for the big, medium, small and marginal farmers, and weaker sections in rural areas. The long-run aim of such a policy should be growth with distributive justice. Vigorous efforts should be made toward its implementation. There is the need to create a cadre of selfless and dedicated social workers and administrators who should faithfully implement the various policy measures.

Dr M.S. Swaminathan points toward five factors which deserve urgent attention in our agricultural policy. They are: (a) The impact of population growth on the size of the land holdings as well as on land fragmentation; (b) The social engineering aspects of improving the efficiency of management of small farms as measured by productivity per day and per unit of land and water; (c) Diversification of labour use leading to a gradual withdrawal of as many landless labour families as possible from the routine operations of farming to subsidiary occupations leading to increased earning and less drudgery; (d) Safeguarding the renewable nature of agricultural operations by protecting the soil and water resources and conserving genetic variability in plants and animals; and (e) Enlarging home and external trade in agricultural commodities on lines which will protect the interests of producers and consumers.¹

NEW AGRICULTURAL STRATEGY OR THE GREEN REVOLUTION

The Green Revolution² refers to the leap forward in Indian agriculture as a result of the adoption of the "new agricultural strategy" in 1964-65. The new strategy aims at raising farm output through the use of High-Yielding Varieties (HYV) of seeds, chemical fertilizers, pesticides,

¹*Our Agricultural Future*, 17th Shri Ram Memorial Lecture, Delhi, January 1982.

²Dr M.S. Swaminathan gives the following reason for using the term Green Revolution: "The growing practice of feeding plants better, our crops are slowly changing colour from a light green or yellow colour of the past to a dark green colour... it is this change in the colour of leaves as a result of famished soils becoming better-fed ones that has led to the coining of the term "Green Revolution." "The Catalyst in Green Revolution", *Commerce*, 27 December 1968.

implements and machinery, multiple cropping, irrigation facilities, agricultural credit, and suitable price for farm products. The HYV programme has been characterized as "one of the authentic marvels of our time" by the Pearce Report, while the Rockfeller Foundation Report describes it as "one of the most amazing agricultural stories of all time."

The new strategy of agricultural development which has led to the Green Revolution in certain crops in India was started as the Intensive Agricultural District Programme (IADP) in three districts in 1960-61 and was subsequently extended to 13 districts. In 1964-65, its modified version was extended to several other parts of the country in the form of Intensive Agricultural Area Programme. While both the Intensive Agricultural District and Intensive Agricultural Area Programmes were concerned with the promotion of intensive agriculture, they operated within the limitations set by existing crop varieties which had relatively low response to fertilizers. A major change occurred with the introduction of high-yielding varieties. Hybridization techniques for maize and millets had been initiated as early as 1960. Hybrid seeds began to be adopted by 1963. In wheat, a beginning of great importance was made in 1963-64 by trying out the Mexican dwarf varieties on a selected basis. Paddy seeds of exotic varieties such as TNL were introduced in 1965. The propagation of various high-yielding varieties over fairly large areas was taken up as a full-fledged programme from Kharif 1966 onwards.

Main Features. The high-yielding varieties programme has been regarded as "one of the greatest feats of biological engineering."¹ It has been taken up for wheat, rice, bajra, maize and jowar. The area under HYV increased from 6.0 million hectares in 1967-68 to 55 million hectares in 1985-86.

With the introduction of high-yielding varieties of seeds on a large scale, the consumption of fertilizers has been increasing steadily since 1965-66. As observed by the Rockfeller Foundation Report, "The jump in fertilizer usage in India in recent years has been one of the biggest and fastest known anywhere in the world." The use of fertilizers (NPK) went up from 4.2 million tonnes in 1967-68 to 5.7 million tonnes in 1985-86.

There has been a rapid expansion of farm mechanization. The use of high-yielding varieties of seeds necessitated by enhanced use of fertilizers has made it imperative to employ improved varieties of implements and machinery such as tractors, power tools and cultural

¹A.S. Kumar, "New Farm Technology—Its Implications to Agriculture Economics," *Journal of Agricultural Economics*, December 1976.

the Green Revolution. The Indian Council for Agricultural Research (ICAR) provides breeder seeds and the National Seeds Corporation (NSC) and the State Seeds Corporations supply foundation and certified seeds to farmers.

The HYV programme has been started in those areas which have an assured rain water and where proper irrigation facilities exist. Minor irrigation facilities have contributed much towards this direction. The additional area under minor irrigation increased from 1.27 million hectares in 1967-68 to 36.4 million hectares in 1985-86.

The new *multiple cropping* plan was taken up in 1967-68. It aims at the development of short duration varieties of rice, maize, jowar, bajra, barley, ragi, oilseeds, potato and vegetables for new crop rotations.

Plant protection is an integral part of the new agricultural technology. It has been estimated by the NCAER that 25 per cent of the total crop is damaged at the growth and post-harvest stage by plant diseases, insects or rodent pests. Damage to the extent of about 15 per cent can be prevented at the growth stage and about 10 per cent at the post-harvest stage through the use of insecticides and pesticides. Such plant protection measures can save agricultural output to the extent of Rs 1,500 crores in the country.

An important plank of the new strategy has been the policy of *support prices* for foodgrains adopted in 1964. In 1965, the Agricultural Prices Commission and the Food Corporation of India were set up in pursuance of this policy for the purpose of fixing prices of foodgrains, and for buying foodgrains from the markets for buffer stock operations and to guarantee and provide remunerative prices for the farmer. This policy has been consistently followed since 1967-68.

Another important feature of agricultural strategy is *farmers' training education*. A pilot scheme for farmers' training and education was started in 1966-67 in five districts. The scheme envisaged functional literacy, farm broadcasts and farmers' training. In subsequent years, it was extended to other districts. Krishi Gyan Kendras have been developed to spread the latest technical skills to farmers and fishermen through the process of learning by doing. The other features of the farmers' education programmes are the dissemination of agricultural information through audiovisual, and formation of farmers' discussion groups.

The Indian Council of Agricultural Research (ICAR) has been entrusted with the task of undertaking research in agricultural products and to provide *educational and research* facilities in its 25 research institutes. The idea of coordinated research was mooted in 1965. The ICAR and agricultural universities in the different States have been playing a crucial role in bringing about the Green Revolution in the

country through on-going research programmes.

Credit has played an important part in popularising the new varieties. The extension services have been delayed. Short and medium-term loans are advanced to farmers through primary cooperative societies, land development banks, commercial banks, regional rural banks and farmers service societies. They have helped the farmers in buying seeds, fertilizers, implements, machines and other inputs.

A Critical Appraisal of the Impact of the Green Revolution

"The Green Revolution in our country has to long last ended the divorce between intellectual and labour in the cultivation of food crops and has generated a climate of confidence in our agricultural capabilities," according to Dr Swaminathan. It has solved the food problem, removed our dependence on food imports considerably, brought higher incomes to many farmers and has given fillip to general economic development through its forward and backward linkages. But there are others who point out that the Green Revolution is a misnomer, for it is neither "green" nor "revolution."⁴ This is, however, going to the extreme and minimising the importance of HYV programme which has really worked wonders in the production of wheat and cereals.

First, we take the favourable impact of the Green Revolution. It has increased the production and productivity of mainly the cereals, wheat and rice. The production of cereals increased from 62 m. tonnes in 1965-66 to 150 m. tonnes in 1985-86, of wheat from 10.4 m. tonnes to 47 m. tonnes, and of rice 30.7 m. tonnes to 64 m. tonnes over the period. There has also been considerable increase in the average yield of these crops per hectare. It was 71 per cent in the case of cereals, 104 per cent for wheat and 52 per cent for rice over the period.

The adoption of the new agricultural strategy has increased rural employment and reduced the extent of disguised unemployment by increasing labour-requirements and man-days in agricultural operations. Separate studies by Johl, Mehra and Singh⁵ for different periods in Punjab have shown that the use of family labour as also the level of employment was higher in the high-yielding varieties as compared to the local varieties.

The increased in employment has also been accompanied by the rise in the real and money wages of agricultural labourers. The daily real

⁴S C Tewari, 'Green Revolution as a Misnomer,' *Vojna*, 26 January 1970

⁵S.S. Johl, Gains of Green Revolution, 1973; Shakuntala Mehra, Some Aspects of Labour Use in Indian Agriculture, June 1976, H K Manmohan Singh, "Population Pressure and Labour Absorbability in Agriculture and Related Activities," *E.P.W.*, 17 March, 1979

wage rates (1966 prices) of agricultural workers for various farm operations increased by 41.75 per cent to 55.24 per cent in 1972 over 1967 in Punjab, and money wages at current prices increased by 55.50 to 70.56 per cent over the same period.

Kahlon and Bal⁶ have shown that as a result of the Green Revolution, the number of farm families in the lower income groups declined and in higher income groups increased.

Despite these achievements, the Green Revolution has failed to affect all crops and has also led to certain adverse effects which are discussed as under.

1. Slow Progress in Rice. Progress in the identification of evolution of improved varieties and their introduction on a commercial scale has been slow. Though improved varieties of paddy like TN-1, TN 65, T-3, ADT-27 and IR-8 have been extensively demonstrated, yet the area under these high-yielding varieties has failed to expand because of the lack of adequate irrigation facilities. The yield declined as the proportion of irrigated rice declined and in such States as Uttar Pradesh, Rajasthan, Orissa, Maharashtra, Madhya Pradesh and Gujarat where the proportion of irrigated area under rice was less than 25 per cent, average yields were very low, which made rice cultivation less profitable.⁷ The yield of rice for 1967-79 rose at the compound rate of only 1.8 per cent. Thus the new agricultural technology does not appear to have made any visible impact on the production of rice.

2. Regional Imbalance. The HYV programme has not spread uniformly in all the States. Only States having irrigation facilities in some areas have successfully adopted the new strategy. The States are Punjab, parts of Haryana, Andhra Pradesh, Gujarat, Tamil Nadu, Uttar Pradesh and Bihar. This has created islands of prosperity in a sea of rural poverty and accentuated regional imbalances even within the States.

3. Economic Inequalities. It is also contended that the Green Revolution has accentuated economic inequalities in the rural areas. It is the rich farmers who own fertile and irrigated lands and can afford to buy new seeds, pesticides and chemical fertilizers and they have taken full advantage of the new strategy; while the poor peasants with small resources and unirrigated land have failed to benefit from the HYV programme. So the Green Revolution has made the rich richer and the poor poorer in India and has intensified economic inequalities.

4. Imbalances in Agriculture. The Green Revolution has created

⁶A.S. Kahlon and H.S. Bal, *Factors Associated with Farm Family Investment Pattern in Ludhiana (Punjab) and Hissar (Haryana) Districts, 1972* (PAU).

⁷A.S. Kahlon, *op. cit.*

imbalance in Indian agriculture, particularly between food crops and commercial crops. It has touched only the fringes of millets, pulses, sugarcane, cotton, groundnut, jute, etc. Whatever increase in production has taken place in these crops that has been the result of increase in areas.

5. Labour Problems. The new strategy has also created labour problems in the rural areas. The HYV programmes consisting of improved seeds, fertilizers, new production techniques and multiple cropping have intensified agricultural operations, thus creating more demand for labour. This has tended to raise the wages of agricultural workers during peak agricultural season to 150 per cent in States like Punjab and Haryana. At certain places, acute shortage of labour is experienced and the natural tendency is to demand higher wages. This has also led to the migration of agricultural workers from eastern U.P. and Bihar to Punjab where such workers are exploited by rich farmers. This has brought deterioration in the relations between the farmers and farm labour which does not augur well for the country.

Besides, there has been large scale eviction of tenants in Green Revolution areas. The use of tractors and harvest combines have displaced farm labour on a large scale, especially women and unskilled workers.

In spite of these defects, the Green Revolution has definitely modernised Indian agriculture. Its demonstration effect has been very strong and the new agricultural strategy has been spreading to other areas.

Further Scope of the Green Revolution (Some Suggestions)

The Green Revolution has taken place in few food crops and in small irrigated areas. As pointed out by Professor Dantwala, "Apart from the unresolved problem of dry regions, agronomic research has yet not evolved corresponding high-yielding varieties for India's major commercial crops like cotton, oilseeds and jute. Though the area devoted to these crops is relatively small compared to foodgrains, a breakthrough in their productivity is crucial to the stability and growth of the industrial and export sector."⁸ The scope of Green Revolution is immense in India and can be enlarged by adopting the following measures:

HYV Programmes. The HYV programmes should be extended to cash crops like cotton, jute, oilseeds and pulses. Though fine-grained good cooking quality varieties have been successfully developed, yet the prospects of high-yielding varieties depend on improvements in the post-harvest market technology and their relative spread to the

⁸M L Dantwala, *Indian Economic Journal*, December 1970.

monsoon versus non-monsoon region. The revolution in wheat was not only due to the HYV programmes but also the result of extension in the area. If the area under wheat cultivation is not to be extended in the future, an intensive application of modern inputs is essential to maintain wheat production at a higher level. To stabilise the yield at higher levels, the emphasis should shift to further improvement in agronomic practice and improving the quantity and quality of the technological inputs and particularly on augmenting the energy input.

Multiple Cropping. The development of multiple cropping short duration varieties of paddy, maize, bajra, jowar, wheat, barley, ragi, oilseeds, potatoes and vegetables is essential for a breakthrough in agricultural production. Multiple cropping not only diversifies and increases farm incomes, but also enhances soil fertility and makes a fuller use of moisture available from late rains. According to Dr Swaminathan, crop rotation should be so chosen that the long-term productivity of the soil is not affected.

Credit Facilities. The new strategy requires large expenditures on inputs. To have a wide diffusion of high-yielding varieties, every farmer should have sufficient funds at his disposal. This requires the expansion of institutional credit facilities by strengthening cooperatives, opening branches of commercial banks and the provision of more adequate extension facilities and supply of seeds, fertilizers, implements and pesticides on credit.

Development of post-Harvest Technology. There is urgent need to develop post-harvest technology in all its aspects which includes processing, storage and marketing. It is the net income per hectare rather than the yield per hectare that includes a farmer to adopt high-yielding varieties. It, therefore, requires a national price policy for all food and non-food crops. The Government should fix procurement prices for all crops and create sufficiently large buffer stocks to guarantee reasonable and fair prices to the producers.

Increasing Fertiliser Consumption. The HYV programmes depend to a large extent on a high degree of fertilizer consumption. To step up fertilizer consumption, agricultural extension and sales promotion arrangements should be intensified. It is essential because farmers usually use less than the recommended dosage of fertilizers. Lack of credit facilities, high prices of fertilizers, and the non-availability of various varieties of fertilizers are some of the factors responsible for their low consumption. Besides providing credit facilities, the supplies of fertilizers should be regulated through cooperative retail depots and fair price shops in rural areas at fixed prices. Efforts should also be made to increase the consumption of phosphatic and potassic fertilizers through demonstration and publicity, because so far the emphasis in

India has been on the use of nitrogenous fertilizers. According to Dr Swaminathan, effective bacterial fertilizers should be produced and distributed widely, since the addition of nitrogen to soil through biological means is both inexpensive and immediately feasible.

Improved Seeds. The maintenance of the genetic quality of high-yielding seeds is essential for sustaining the improvement in productivity. The shortage of breeder and foundation seed has been the main bottleneck in extending the coverage under high-yielding varieties. Therefore, greater efforts should be made to step up their production. The infrastructure for foundation seed production should be strengthened.

Expansion of Irrigation. The success of the HYV programmes depends primarily on the availability of adequate irrigational facilities. For instance, "a breakthrough in the production of rice is clearly dependent on our ability to ensure adequate and regulated supplies of water during the kharif season.

Development of Dry Farming Techniques. So far the new technology is related to wet farming. Immediate attention should be paid to its extension to dry farming areas. Techniques are available which enable better moisture conservation, root growth and utilization of nutrient. "Dry farming research...has shown that it is possible to obtain 4 to 6 quintals of maize per hectare and 30 quintals of jowar per hectare from the same land by following multiple cropping under dryland farming that the dryland crop cafeteria, comprising cereals, grain legumes, oilseeds and forage grasses has a great promise in the dry farming areas." Besides adopting dryland practices for such crops, Dr Kahlkin suggests that "research should be intensified to develop suitable technology for inoculation of groundnut with Rhizobium under dryland farming conditions and particularly refinement of water harvesting technique should receive high priority."

Land Reforms. Speedy implementation of land reforms is essential for the spread of Green Revolution throughout the country. In 1970, 10% of tenancy and conversion of tenures into ownership, could be induced to take more interest in the adoption of the HYV programmes. Moreover, as pointed out by Professor Datta, the same law committee of agrarian reform would be well advised to consider and a highly vulnerable class of socially and economically disadvantaged groups.

Cooperation. Given institutional and technological assistance to farmers, some of the deficiencies and shortcomings in existing agriculture is reasonably optimistic in India. The implemented "soil based measures would help in augmenting the yield of crops. Apart from more food and agricultural output for the country and for export, the Green Revolution will be

monsoon versus non-monsoon region. The revolution in wheat was not only due to the HYV programmes but also the result of extension in the area. If the area under wheat cultivation is not to be extended in the future, an intensive application of modern inputs is essential to maintain wheat production at a higher level. To stabilise the yield at higher levels, the emphasis should shift to further improvement in agronomic practice and improving the quantity and quality of the technological inputs and particularly on augmenting the energy input.

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Land Reforms. Speedy implementation of land reforms is essential for the spread of Green Revolution throughout the countryside. Security of tenure and conversion of tenants into owners, enable the farmers to take more interest in the adoption of the HYV programmes. Moreover, as pointed out by Professor Dantwala, the immediate concern of agrarian reform should be with a tiny privileged sector and a highly vulnerable class of socially and economically disadvantaged person.

Conclusion. Given institutional and technological measures to overcome some of the deficiencies and shortcomings, the outlook for agriculture is reasonably optimistic in India. The adoption of the above noted measures would help in augmenting yields in respect of all types of crops. Apart from more food and agricultural raw materials for the country and for export, the Green Revolution would remove underem-

ployment and unemployment and help to release land for producing fodder and feed. Thus the Green Revolution can develop the unutilised cattle wealth of the country. Further, the transport, marketing and storage problems are bound to arise when the Green Revolution takes place in all agricultural commodities which would necessitate the building up of a market structure not only for food and cash crops but also for the dairy enterprise in the country. Despite these problems which are not insurmountable, the Green Revolution may prove to be *cornucopia* for India, as has been amply demonstrated by the wheat revolution.

LAND REFORMS

Meaning

The term 'land reform' as it is generally understood means the redistribution of property in land for the benefit of small farmers and agricultural workers. But this is a narrow definition. Land reform in its wider connotation means any improvement in agricultural economic institutions.⁹ According to Myrdal, "Land reform is a planned and institutional reorganisation of the relation between man and land, and no type of reorganisation of ownership and tendency of land can be maximally benefited except when it is combined with certain policy efforts."¹⁰

Importance

Land reforms are a necessary precondition for agricultural and rural development. According to Myrdal, they are the key to agricultural development in LDCs. Land reforms are essential to reduce income inequalities, and unemployment in rural areas. There is wide disparity in the distribution of land holdings in India. The small and marginal farmers who constituted 72.6 per cent of land holders operated only 23.5 per cent of the agricultural land in 1976-77. This means that land ownership is still concentrated in the hands of the medium and large landholders. So there is urgent need to redistribute land among the small and marginal farmers and to the actual tillers of the land which will reduce inequalities and provide more employment to them. It is commonly argued that the redistribution of land to such categories of cultivators tends to reduce agricultural production because small and marginal farmers do not possess sufficient means to buy the necessary inputs. However, empirical studies have shown that land reforms bring

⁹J.S. Uppal (ed.), *India's Economic Problems*, 1975.

¹⁰G. Myrdal, *Asian Drama*, 1968.

both production gains and improved equity provided such farmers are helped by supportive government services like credit, seeds, fertilisers, storage and marketing facilities, etc.¹¹ In fact, it falls within the purview of land reforms that cultivators who are transferred land should be provided all types of incentives and inputs so as to increase farm production.

The recent technological changes in agriculture have primarily benefited the medium and large farmers with the result that the already unequal agrarian structure has become more lop-sided. Further, the new agricultural strategy has increased substantially the net yield from agricultural land. This has encouraged the non-cultivating landholders to evict the tenants from their land in order to cultivate it themselves and thereby profit directly. The evicted tenants have been forced to work as landless agriculturists on the farms. In other cases, the new strategy requires heavy investment in land shaping, infrastructure and inputs which a tenant is not willing to make unless he is assured of his clear right to land or compensation. There is thus more urgent need to day for land reforms to eliminate such monopoly elements.

Besides, the agricultural holdings are badly subdivided and fragmented in almost all the states except Haryana, Punjab and Uttar Pradesh. It is imperative that such holdings should be consolidated for planned development of agriculture and increased production.

Last but not the least, land reforms are essential to remove such impediments to agricultural development as arise from our unequal agrarian structure. They are needed to eliminate exploitation and social injustice within the agrarian system. They will ensure equal tenurial status and opportunity to all, increase production, income and employment in rural areas, and ultimately bring growth with social justice.

Objectives

Land reform measures aim to achieve a number of objectives. Their first objective is to increase agricultural production by improving the economic condition of the small farmers and tenants by consolidation of holdings and tenancy reforms. Second, by abolishing intermediaries, providing security of tenures and distribution of surplus land, land reform measures bring land to the tiller. They provide incentive to the cultivator to work more and earn more thereby bridging the gap between the rich and the poor farmers. Finally, the increase in

¹¹G. Parthasarathy, *Agricultural Development and Small Farms—A Case Study of Andhra Pradesh*, 1971. Also Doreen Warburd, "Employment and Income Aspects of Recent Agrarian Reforms in Middle East", *International Labour Review*, June 1970

productive efficiency and income of the rural people will tend to create more demand for consumer goods and agricultural inputs thereby diversifying the economy. The First Five-Year Plan of India laid down two objectives of land reforms which have been carried through in the other Five-Year Plans: "(i) to remove such impediments to increase in agricultural production as arise from the agrarian structure inherited from the past. This should help evolve conditions for evolving as speedily as possible an agricultural economy with high levels of efficiency and productivity; and (ii) to eliminate all elements of exploitation and social injustice within the agrarian system, to provide security for the tiller and assure equality of status and opportunity to all sections of the rural population."

Land Reforms Policy

The main elements of land reforms in India have been: (i) Abolition of intermediaries; (ii) tenancy reforms, comprising regulation of rent, security of tenure and conferment of ownership rights on tenants; (iii) ceiling on land holdings and distribution of surplus land; (iv) consolidation of holdings; and (v) reorganisation of agriculture.

(i) **Abolition of Intermediaries.** At the time of independence, the usual systems of land tenure in India were the zamindari, the ryotwari and the mahalwari. The landlords, jagirdars, talukdars, inams, etc. were the various forms of intermediaries who collected rent from the cultivators and deposited it with the State governments in the form of land revenue. Such intermediaries were primarily absentee landlords who did not care to bring improvements on land. Instead they indulged in rack-renting, sub-letting, and other nefarious activities aimed at exploiting the peasants. Such tenures were prevalent in 40 per cent of land under cultivation in 1950.

By 1954 all States passed laws to abolish intermediaries. These laws have been implemented in all the States and intermediary tenures have almost been abolished all over the country. As a result, about 20 million tenants have come into direct contact with the state. About 58 lakh hectares have been distributed among tenants and share-croppers. Besides, large areas of forest land, grazing land and culturable waste land belonging to intermediaries have been vested in the state. Intermediaries have been permitted to retain farm lands for personal cultivation within certain limits. The limits of farm differ from State to State depending upon their agro-climatic conditions. Intermediaries have been paid compensation for the loss of their rights. The total compensation to intermediaries has been estimated at Rs 670 crores, out of which Rs 320 crores had been paid partly in cash and partly in bonds spread over a period of 20 to 40 years by the end of 1970.

The abolition of intermediary tenures has not been an unmixed blessing. It brought tenants into direct relationship with the state and conferred full ownership rights on others, thereby putting an end to exploitation by landlords. It also increased the income from land revenue to the State governments. Thus it has been beneficial both socially and economically.

On the other hand, the state was burdened with the payment of large compensation "It would have been advantageous had the compensation arrangements been linked up with schemes of productive investment as were recently done in Taiwan and earlier in Japan."¹² On the plea to resume land for personal cultivation, many intermediaries evicted the tenants and while others retained considerable portions of land dividing it among their family members. Some of the zamindars continued to retain their entire holdings of land by forming cooperative farms. A few still exist in one form or the other.

(ii) Tenancy Reforms. Tenancy reforms comprise regulation of rent, security of tenure, and conferment of ownership rights on tenants. Tenant cultivators of all types whether occupancy, non-occupancy or sub-tenants were subjected to rack-renting at the time of independence. Moreover, tenants-at-will (or non-occupancy tenants) and sub-tenants were ejected from the leased land by the landlord at his will. Further, occupancy tenants cultivating for years were never conferred ownership rights by their landlords. According to the National Sample Survey of 1953-54, 20 per cent of the total area under cultivation in India was leased out to tenants.

The First Five-Year Plan laid down three guidelines for the reform of tenancy: (a) Rent should not exceed 1/5 to 1/4 of the gross produce, (b) all tenancies should be declared non-resumable and permanent except in certain specified circumstances; and (c) in respect of non-resumable land, the landlord-tenant relationship should be ended by conferring ownership rights on tenants. All the states have enacted legislation on these guidelines. But the extent to which they have been implemented is discussed below:

(a) Regulation of Rent. Before the enactment of laws regulating rent, tenants were paying exorbitant rents ranging from 50 to even 80 per cent of the produce to the landlords. Now the maximum rates of rent have been fixed at levels not exceeding 1/4 to 1/5 of the gross produce in all States except in Andhra Pradesh, Haryana and Punjab.¹³ In Andhra

¹² J. S. Uppal, op. cit.

¹³ G.O.I., Planning Commission, Sixth Five-Year Plan, 1980-85, p.

Pradesh it is 30 per cent for irrigated land and 25 per cent for dry land, while in Haryana and Punjab it is $33\frac{1}{3}$ per cent of the gross produce.

(b) *Security of Tenure.* Several States have enacted legislation for conferring security of tenure on tenants. But they are not uniform. Except for Uttar Pradesh and Delhi, in no other State, tenants have been provided complete security. In some States in the event of resumption of land for self-cultivation by the landlord, a minimum land is required to be left with the tenant-cultivator. In others, there is no provision for a minimum land to be left for the tenant in case of resumption of land for self-cultivation. In fact, the legislation lays down the conditions under which the tenants are liable to ejection. These include non-payment of rent, sub-letting the land, and using the land for non-agricultural purposes. The State Acts also provide for the right of resumption of land by the owner if the same is a small owner, widow, minor, unmarried woman, physically handicapped serving/retired army personnel or has land as the only source of income. Thus, under the existing legislation, the position of tenants, and particularly of share-croppers continues to be insecure in Bihar, Tamil Nadu, the Andhra area of Andhra Pradesh, the Saurashtra area of Gujarat, Punjab and Haryana.¹⁴

(c) *Rights of Ownership.* Necessary legislation has been passed in several States for enabling tenants to acquire ownership rights. In some States, the governments have taken over the land from the owners after paying compensation to them and then the same is liable to transfer to the tenant-cultivators on paying its price to State in instalments. In others, the tenants have been asked to pay a fixed compensation direct to the owners in instalments. In still others, the State has resumed the ownership of the land to itself and the tenants have been brought into direct relationship with the State till they pay its minimum price to the State. But in West Bengal and Jammu and Kashmir rights of ownership have been conferred on certain categories of tenant-cultivators without compensation. The available data reveal that ownership rights have been conferred on 3.4 million tenants in 7.7 million acres of land. The Sixth Plan admits that "in regard to the conferment of ownership rights on cultivating tenants, the existing legislation in the States of Andhra Pradesh, Bihar, Tamil Nadu, Haryana and Punjab still falls short to the accepted national policy." On the other hand, there have been large scale ejections through the device of "voluntary surrenders."

The above progress of tenancy reforms reveals that they have failed to achieve their objectives of regulating fair rents, security of tenure and conferring ownership rights on the tenants. The principal reason has

¹⁴G.O.L., Planning Commission, *Draft Fifth Five-Year Plan, 1974-79, Vol. II, 1973.*

been the existence of legal flaws in legislative measures passed by the State governments. Laws provide many rights to landlords to resume land for self-cultivation and to eject the tenants on flimsy grounds. The tenants are illiterate and poor and have neither the ability nor the means to go to the courts of law to protect their rights. The absence of correct land records and lack of the will to implement the tenancy laws have also been responsible for the dismal progress of tenancy reforms.

(iii) Ceiling on Agricultural Holdings. Ceiling on agricultural land holdings means fixing the maximum limit up to which a cultivator can hold land. Surplus land above the ceiling is acquired and distributed by the government. The aim is to reduce the concentration of land holdings in few hands, and to provide economic holdings to the landless agricultural workers and marginal farmers in order to increase their employment and income opportunities. Given appropriate incentives, small farmers increase production, as has been the experience in Japan. Thus ceiling in land holdings is an important step toward achieving growth with social justice.

Laws imposing ceiling on agricultural holdings began to be implemented during the Third Plan. Prior to 1972, the unit of application was an individual landholder so that every member of a family could hold land up to a prescribed limit. This defeated the very purpose of imposing land ceilings for the entire land belonging to one landlord could be distributed among his family members. Moreover, the ceiling limit had been fixed at a very high level with a wide range depending upon the nature of the land. For instance, in Punjab and Haryana, an individual landholder could hold 27 to 100 acres, and in Andhra Pradesh 27 to 234 acres. Consequently, the results achieved were meagre due to the high ceiling level, large number of exemptions, malafide transfers and partitions, and poor implementations. Accordingly, only 23 lakh acres of land was declared surplus after the imposition of ceilings in the different States out of which 12.5 lakh acres had been distributed to landless agricultural workers and marginal farmers till 1972.

According to the amended ceiling laws passed by the States after 1973, a family consisting of five members has been made the unit of application, the maximum ceiling limit has been lowered, the range between the lowest and the highest ceiling has been narrowed, and most of the exemptions have been withdrawn. Now the lowest limit of ceiling is 9.1 acres in Jammu and Kashmir and the highest 54 acres in Madhya Pradesh and Haryana for dry land. But the usual ceilings are on the basis of irrigated land with two crops and one crop a year. For instance, in Rajasthan and Haryana it is 18 acres for the former and 27 for the latter, in Punjab and U.P. it is 17 acres and 27 acres respectively. However, where the family members exceed five, the ceiling

higher. But the progress of taking over the distribution of ceiling surplus land has been very slow. Of nearly 7.2 million acres of land declared surplus under the revised ceiling laws, 5.6 million acres have been taken possession of in the various States. Of this, nearly 4.4 million acres have been distributed among more than 1.8 million peasants belonging to the weaker sections of the society. Poor implementation and prolonged litigation have been mainly responsible for the tardy progress.

A scheme of providing financial assistance to assignees of ceiling-surplus land was started in 1975-76 for the landless poor so as to enable them to cultivate the assigned land which is generally of poor quality. Under this scheme, financial assistance is provided upto Rs. 2,500 per hectare in the form of grant to the assignee for simple land development, provision of inputs and for immediate consumption needs. Since the inception of the scheme, Rs. 25 crores have been released to the States for this purpose. Another Rs. 30 crores were provided during the Sixth Plan for this scheme, with an equal amount as matching outlay by the States. But the Centre did not release any amount because the States did not provide their matching share and failed to submit utilization certificate of allocated funds. Thus little progress has been made in this direction due to the apathy of the State Governments.

(iv) **Consolidation of Holdings.** Consolidation of holdings implies rearrangement of scattered and subdivided holdings of individual farmers by exchanging them with similar holdings of other farmers in a particular area. The average size of operational holding in the country has declined from 3.1 hectares in 1953-54 to 2 hectares in 1976-77. It is even less than 2 hectares in Assam, Bihar, West Bengal, Orissa, Uttar Pradesh, Tamil Nadu and Kerala. This is indicative of the continuous pressure being exerted on limited land resources by a steadily growing population. This has further led to sub-division and fragmentation of the agricultural holdings in many of the States. By consolidating such scattered and subdivided land holdings, agricultural production can be increased and much saving can be affected in time, money and resources.

Fifteen States have passed laws to undertake consolidation of holdings. But their implementation has been extremely patchy and sporadic. Complete consolidation has been done only in Punjab, Haryana and Western Uttar Pradesh. The work has not started in Southern and Eastern States and Rajasthan, while little progress has been made in States like Maharashtra and Himachal Pradesh. By the end of 1985, about 52 million hectares of land had been consolidated all over the country.

The main reasons for slow progress and non-implementation of legislation have been lack of up-to-date land records, lack of finance, wide differences in land values, the difficulty of exchanging irrigated and rainfed lands even within the same village and lack of trained personnel to carry out the work of consolidation.

(v) Re-organisation of Agriculture. Re-organisation of agriculture is the last plank in the scheme for land-reforms. This is essential to benefit the small and marginal farmers, the share-croppers and the agricultural landless workers. During the first three plans this was sought to be done through cooperative farming societies. But they could not be formed due to the personal rivalries and caste and status distinctions in villages. However, a few societies did come up to grab the various incentives and facilities provided by the State in cash and kind. But they were fictitious having been formed on behalf of the tenants and share-croppers by the erstwhile landlords. The Fourth Plan, therefore, adopted the Small Farmers' Development Agencies (SFDA) in 1971. The Integrated Rural Development Programme (IRDP) was introduced in 1976-77 to assist the small and marginal farmers, share-croppers and landless agricultural workers. There has also been a centrally sponsored scheme of assistance to allottees of ceiling surplus land which has now been extended to the area covered by special programmes of SFDA and IRDP.

A Critical Appraisal

The land reform measures adopted in India have been comprehensive. But their progress has been highly unsatisfactory. The Sixth Five-Year Plan document admits that, "it has not been due to flaws in policy but to indifferent implementation. Often, the necessary determination has been lacking to effectively undertake action, particular in the matter of application of ceiling laws, consolidation of holdings and in not vigorously pursuing concealed tenancies/occupancy rights as enjoined under the law." Not much effort has been made to assist the allottees of surplus land to develop the land despite the existence of the centrally sponsored scheme of assistance, and SFDA and IRD programmes. Organisational inadequacy and lack of resources have prevented the work of compilation correction and updating of land records about ownership and rights of tenants, sharecroppers and other landholders. Above all, there are flaws in the existing land reform laws and there has been slow disposal of appeals and revisions filed by landowners against the State revenue authorities.

The immediate need is to plug all legal loopholes in the existing land reforms. All existing and future Land Reforms Acts should be included in the Ninth Schedule of Constitution so that these laws cannot be challenged in courts. Till then, Land Reform Tribunals should be set up

in the form of itinerant courts in order to bring justice to the door of the poor people. The Land Reforms Commissioner should be the final appellate court in all case of disputes. The legal procedure should be simplified, not more than one revision and one appeal should be allowed. Since beneficiaries of land reforms are illiterate and poor, they should be provided free legal assistance by the State.

For speedy implementation of laws relating to ceilings, tenancy, and consolidation of holdings, the revenue machinery should be strengthened by appointing trained personnel who shall be of much use to the tribunals as well. They shall be responsible for undertaking the work of compilation, correction and updating the land records, and also help in consolidation of holdings. Persons appointed for this purpose and on tribunals should be well-versed with local conditions, rights and customs of different areas and regions. They should be persons of proven ability and integrity and possess the will to implement the various land reforms vigorously. But all this is not possible unless there is dynamic, firm and unambiguous political direction.

Further, there is the need to organise tenants and landless agricultural labourers so that they may bring pressure on the Government for the effective implementation of land reforms. In the absence of a strong peasants' organisation, the next best arrangement is to associate committees of beneficiaries with the implementation of land reforms. Such committee should be established at the village and block levels to advise on the implementation of all measures of land reforms and provision of supporting facilities to beneficiaries of land reforms.

Lastly, it should be made legally binding on the allottees of surplus land not to sell or mortgage it. Law should also be passed against sub-division of the allotted land by fixing a floor ceiling on holdings. All such laws should be rigorously implemented otherwise they will defeat the basic objective of achieving social justice through land reforms.

AGRICULTURAL PRICE POLICY

A suitable agricultural price policy holds the key to growth in a developing country like India. Agricultural prices have a tendency to display wide inter and intra-year fluctuations. Such fluctuations are the result of: (a) relatively low price elasticity of demand for agricultural commodities, and (b) biological and seasonal nature of agricultural production. The price elasticity of demand for agricultural commodities is less than unity. Due to the biological and seasonal nature of agricultural production, the price elasticity of supply is also low. It is this low elasticity of demand and supply that causes severe fluctuations in agricultural prices in such countries.¹⁵

¹⁵A.S. Kahlon and D.S. Taneja, 'Agricultural Price Policy in India', *Economic Geopolitics*

Fluctuations in agricultural prices harm both the producers and the consumers. The aim of agricultural price policy is to iron out price fluctuations of agricultural commodities so as to reduce the loss to the producer from a sharp price fall following a bumper crop and to minimise the difficulties of the consumers from a sharp price rise as a result of short supplies due to a crop failure. The ultimate aim is to bring price stability in agricultural commodities.

Again, price stability is also essential to curb speculative activities in agricultural commodities in a mixed economy like India.

The principal aim of the agricultural price policy is to protect the weak producers who do not have the means to sell their produce in the market. Due to the lack of market information, inadequate storage facilities and small staying power, they are forced to sell their produce at unremunerative prices to the intermediaries. They, therefore, need to be protected by a price support policy whose basic elements are: (i) an organisation for price policy formulation; (ii) an agency/agencies for making support purchases or procurement on behalf of the Government; and (iii) operation of buffer stock and distribution¹⁶.

Such a price policy is also essential in order to increase agricultural production. A number of farmers use costly inputs like fertilizers, improved seeds, modern implements, etc. For this, the agricultural price policy has to be growth-oriented by ensuring minimum prices to the farmers for different farm products. Minimum prices also encourage the farmers in crop planning.

In developing countries like India, agricultural output constitutes 50 per cent or more of the national product. Agriculture provides foodgrains to the people, raw materials to various industries and also contributes to the export sector of the economy. The agricultural price policy should generate large agricultural surpluses from the farm sector in order to augment the financial resources of the State for further development.

Since the farmers depend upon a number of consumer goods and inputs on the non-agricultural sector, the aim of agricultural price policy is to ensure that the income levels of the farmers are not reduced by continuous unfavourable terms of trade between the agricultural sector and the non-agricultural sector.

Thus the principal objectives of agricultural price policy are to bring price stability in order to safeguard the interests of the consumers and the producers, to encourage production, to increase agricultural surpluses, and to prevent the movement of terms of trade against the

¹⁶A.S. Kahlon and D.S. Tyagi, op. cit.

farm sector. The agricultural price policy in India was primarily consumer-oriented during the first two Five-Year plans. It was only in 1964 that a policy of support prices for foodgrains was adopted throughout the country and the importance of guaranteed minimum prices to producers was recognised for the first time. In the subsequent year, the Agricultural Prices Commission (APC) was set up to advise the Government on appropriate price policies for agricultural commodities and to take into account: (a) the need to provide incentive to the producer for adopting improved technology and for maximising production; (b) the needs to ensure rational utilisation of land and other production resources; and (c) the likely effect of the price policy on the rest of the economy, particularly on the cost of living, level of wages, industrial cost structure, etc. In 1980, the terms of reference of the Commission were expanded and *inter alia*, it is now required to take into account the changes in the terms of trade between agricultural and non-agricultural sectors.¹⁷ In 1985, the Agricultural Prices Commission was renamed as Commission for Agricultural Costs and Prices (CACP).

In 1965 was also established the Food Corporation of India to provide all-India machinery for the procurement of foodgrains in terms of shortage and price support in times of plenty. For the minimum support prices to be effective in facilitating agricultural production, the Foodgrains Policy Committee (1966) stressed that: (i) the announcement of prices should be made well before the sowing season; (ii) the guaranteed minimum support prices should be fairly stable to create a favourable climate for long-term investment; (iii) wide publicity should be given by the Government to the minimum support prices and to the effect that it will be prepared to purchase all the quantities offered to it at those prices; and (iv) adequate arrangement should be made at important markets for making purchases at the support prices wherever the need arises.¹⁸

The Committee also stressed the importance of the national management of food in order to plan the supply and distribution of food. For this purpose, it recommended: (i) procurement to ensure necessary supplies; (ii) control over inter-State movement to facilitate procurement and keep prices at a reasonable level; (iii) a system of public distribution to ensure equitable sharing; and (iv) the building up a buffer stock to provide against difficult years.

Every since the Fourth Five-Year Plan, the main instruments of agricultural price policy have been four fold: (a) announcement of

¹⁷A.S. Kahlon and D.S. Tyagi, *op. cit.*

¹⁸G.O.I., *Report of the Foodgrains Policy Committee*, 1966

minimum support prices by the CACP for major farm crops well before the sowing season; (b) fixation of procurement prices for major foodgrains by the CACP for the purchase of compulsory levy by the Government; (c) operation of buffer stocks to stabilise prices; and (d) a public distribution system of safeguard the interests of consumers involving the issue prices of certain important commodities.

Agricultural price support/procurement policy now covers 15 crops. The minimum procurement prices are recommended by the CACP for wheat, paddy and coarse grains, and the minimum support prices for barley, gram, moong, arhar, urad, mustard, groundnut, sunflower seed, soyabean, cotton, sugarcane and jute. The CACP takes into consideration the following criteria while making its recommendations for minimum support/procurement prices; cost of production, changing input prices, market prices, demand and supply, effect on industrial cost structure, effect on cost of living, effect on general price level, international market situation, inter crop price parity, input-output price parity, and parity between prices paid and received. In arriving at the support/procurement price of a farm product, the CACP takes into account the average cost of production under the Comprehensive Scheme in the main producing States and recommends a price which covers the cost of production and provides a margin of profit to the farmer. The National Agricultural Cooperative Marketing Federation (NAFED) is the agency for ensuring the minimum prices.

A Critical Appraisal

The agricultural price policy being followed in India has played a significant role in stimulating production of agricultural commodities, raising their prices, making terms of trade favourable for the agricultural sector, raising income of the farmers and protecting the consumer through the public distribution system. This has been done by announcing support/procurement prices for 15 major crops fully backed by institutional arrangements for government intervention in case the market prices tend to fall below them. Buffer stocks are built up through procurement at support prices which sustain the public distribution system. Over 15 million tonnes of foodgrains are produced by public agencies annually. With raising costs of inputs, the Government has been increasing procurement/support prices every year in the interest of farmers. We discuss these favourable effects below.

G.S. Gupia in his study of *Agricultural Prices Policy and Farm Incomes*, has shown that price support/procurement policy has positive effects on farm prices. In the pre policy era for the ten-year period 1955-56 to 1964-65, the annual compound growth rate of price-raise in the case of wheat was 6.43 per cent while it was 1 per

cent in the post policy era for the ten year period 1965-66 to 1974-75. For paddy the growth rates for the two periods were 4.72 per cent and 10.36 per cent; for groundnut 8.68 per cent and 10.82 per cent; and for cotton 2.74 per cent and 10.5 per cent, respectively. The same has been the case with other farm products.

So far as the terms of trade between agricultural and non-agricultural sectors are concerned Thamarajakshi's analysis shows that for the period 1964-65 to 1974-75 the terms of trade were favourable for the agricultural sector. Kahlon and Tyagi have shown that they moved against the agricultural sector for the year after 1974-75 thereby necessitating higher levels of support/procurement prices.

The procurement/support price policy has also been instrumental in increasing agricultural production in the case of a number of crops. For instance, the index of wheat production increased from 57.6 in 1965-66 to 178.7 in 1985-86, of rice from 78 to 148, of oilseeds from 85.6 to 130.4, and of cotton from 86.7 to 157.8 over the period.

The increased production led to positive effects on marketed surplus. In 1964, a year before the start of the procurement policy, 1.4 million tonnes of foodgrains were procured. Since then the procurement of foodgrains has been on the increase. From 4 million tonnes in 1965 to about 7 million tonnes in 1968 to about 9 million tonnes in 1971 to about 13 million tonnes in 1976 to 20 million tonnes in 1985-86.

The increase in production and marketed surplus have naturally led to the rise in incomes of the farmers which have been in turn influenced by high procurement/support prices of farm products.

Not only this, the consumers have also benefited from the agricultural price policy. The public distribution system has been playing a vital role in supply management and has helped to keep consumer-prices stable. There are more than 3.3 lakhs recognised fair price shops which provide foodgrains at reasonable prices to consumers. Of the total number of fair price shops about 78 per cent are in rural areas. More than 17 million tonnes of foodgrains were distributed through these fair price shops in 1985-86.

Its shortcomings. The agricultural price policy has not been an unmixed blessing. It has its shortcomings. The policy of administered prices has been benefiting neither the consumer nor the Government. When the Government raises the procurement prices of cereals, this increases their issue prices through the public distribution system which, in turn, push up the cost of living index thereby leading to an additional instalment of D.A. to Government employees. Even a small increase in the issue price of any cereal leads to a rise in its open market price. This further leads to price escalation in other sectors. If the Government does not increase the issue price with the rise in procurement prices, the

burden of food subsidy to the Government increases many times. So the agricultural price policy has failed to bring price stability.

Further, when the procurement price is raised, it benefits neither the producer nor the consumer. There is a vast difference between the procurement prices and the market prices of cereals. The middleman and the trader benefit the most when they buy cereals at minimum procurement prices and sell the same at almost double the prices in the open market. As a result, the producer is deprived of the profit and the consumer suffers from the price rise.

Minimum procurement/support prices have induced producers to alter the composition of agricultural output. Keith Griffin points out that wheat acreage in India has expanded at the expense of the more nutritious high protein pulses. According to him, "Given that the average Indian receives 8 per cent less protein than in 1960, a high support price for wheat seems unwise as well as unnecessary." But the real reason for the shift from pulses cultivation to wheat cultivation seems to be the non-existence of the minimum support price policy for pulses till 1978-79.

Critics point out that the procurement prices fixed in recent years in the case of foodgrains have been kept low leading to decline in real income of the producers. Grewal and Rangi in their study of paddy and wheat in Punjab have shown that a farmer who obtained a procurement price of Rs 77 per quintal for paddy in 1977-78, in fact received Rs 53 only in the year 1982-83 in real terms when the procurement price was Rs 122 per quintal. In the case of wheat cultivation, the average margin of profit on per quintal basis in money terms remained more or less static both on cost A₂ and cost C basis during the decade 1970-71 to 1980-81. But the profit margin in real terms showed a big slump because the purchasing power of a quintal of wheat in 1980-81 was only one-half compared to what it was in 1970-71. They conclude that "the agricultural prices policy has been able to maintain only the money incomes of the farmers and not their real incomes." If this continues, it will in the long run stifle the growth process by having a dampening effect on incentives to invest. It will squeeze out the small and marginal farmers who already are poor. Lastly, it will quicken the pace of capital-intensive technology.

In order to remedy this situation, the increase in general price level should be neutralised by providing a margin over and above what is warranted by the rise in cost of production. Second, the input prices should be rationalised and scaled down. Finally, the prices of manufactured goods should be controlled and regulated. All these measures are essential for the success of agricultural price policy so that the interests of both the producers and consumers are safeguarded.

Chapter 68

INDUSTRIAL DEVELOPMENT AND POLICY UNDER THE PLANS

INTRODUCTION

In 1950, the pattern of industrial development in India presented a strange spectacle consisting principally of cotton and jute textiles, sugar, cement, coal, mining, and iron and steel industries. The country had a narrow industrial base and had to import from a pin to a locomotive. This was due to the apathetic laissez faire policy of the British Government. The National Government which took over from the British in 1947 had a gigantic task of rebuilding the badly worn out existing industries through the Second World War and the Partition, and of launching State engineered industrialization in a planned manner. The extent to which India has succeeded in diversifying the industrial base of the economy can be viewed from the industrial growth during the various Five-Year Plans.

INDUSTRIAL DEVELOPMENT UNDER THE PLANS

The First Plan was a transitional plan meant to rehabilitate the Indian economy hit hard by the War and Partition. It aimed at developing agriculture to fill the gap in foodgrains and raw materials created by the partition of the country and to create the necessary economic overheads like power and transport for industrialization in the subsequent Plans. Accordingly, industrial and mineral development was primarily left to the private sector, the State's share being 6 per cent in the total outlay of the Plan. The total expenditure by the State on industrial development was Rs 117 crores as against Rs 370 crores by the private sector.

Industrial production increased by 38 per cent during the First Plan period. The index of industrial production (base 1960) increased from 54.8 in 1951 to 72.7 in 1955. Progress in various industries was not uniform. Production of consumer goods increased by 34 per cent, of capital goods by 70 per cent and of industrial raw materials by 34 per cent. The performance of individual industries varied much. The production of paper, paper-board, bicycles and sewing machines matched the Plan targets. Cement production increased by about 2

million tonnes over the Plan period. General engineering, heavy chemical and chemical industries progressed considerably. A number of public sector undertakings were launched. They were Hindustan Cable Factory, Hindustan Machine Tools, Integral Coach Factory, Penicillin Factory, Chittaranjan Locomotive, Sindri Fertilizer Factory, Newsprint Factory, and Indian Telephone Industries. In the case of certain industries like steel, aluminium, fertilizers, etc., the targets set under the Plan were not reached. Despite a modest Plan investment, the overall industrial production increased as never before and a wide industrial base was created.

The Second Plan One of the major objectives of the Second Plan was rapid industrialization with particular emphasis of the development of basic and heavy industries. The shift in the pattern of industrial development was in keeping with the Industrial Policy Resolution of April 1956. It envisaged a large expansion of the public sector in the sphere of minerals and industries development. Accordingly, top priority was accorded to the development of heavy machine building, electricals, steel, machine tools and non-ferrous metals. Employment potential of heavy industries being limited over the short run, attention was focused on the development of cottage and small industries. Rs 175 crores were spent on their development in the Plan period against Rs 43 crores in the First Plan. Rs 900 crores were spent on the development of industries and minerals. Development of small and large industries accounted for 24 per cent of the total outlay. In keeping with the New Industrial Policy, the private sector was given its due share. The private sector investment of industries was Rs 6.57 crores and on small industries Rs 175 crores. Public and private sectors were viewed as parts of a single mechanism.

There was significant advance in industrialization during the Second Plan. The index of industrial production rose from 72.7 at the end of the First Plan (base 1960) to 100 in 1960. There was significant advance in certain spheres. The production of iron ore and aluminium rose by 150 per cent, of steel ingots by 100 per cent and of machine tools by 50 per cent. One of the major steps towards building a solid capital base was the establishment of three steel mills at Rourkela, Bhilai and Durgapur in the public sector with an initial capacity of 10 lakh tonnes. In the private sector, the production capacity of TISCO, IISCO and MISW was raised by 7 lakh tonnes, 5 lakh tonnes and 75,000 tonnes, respectively. Another achievement in the industrial field was the production of new items, such as boilers, tractors, newsprint, motor cycles, scooters, sulpha and antibiotic drugs, DDT, dyestuffs, etc. Rapid progress was made in the production of durable consumer goods like fans, radios, bicycles, electric goods, etc.

However, the Plan failed to achieve physical targets of steel, fertilizers, newsprint, dyestuffs, soda ash, cement, chemicals, pulps, sulphuric acid, pig iron, refractories, sewing machines, railway wagons and cotton textile machinery. This was due to the foreign exchange crisis which started in 1957 and the non-availability of machinery, equipment and technical knowhow from foreign countries in time. The performance in the small industries was also disappointing. Despite shortfalls in the various spheres, the Second Plan has been characterized as the beginning of a veritable industrial revolution by laying the foundations of a strong industrial base with the help of imported skills and technology.

The *Third Plan* was the first step towards the long-term industrial development of the economy extending over the next 15 years. The main objective towards this end was "to expand basic industries like steel, chemical industries, fuel and power and establish machine building capacity, so that the requirements of further industrialization can be met within a period of ten years or so mainly from the country's own resources." Thus the industrial sector was regarded as crucial for securing rapid economic advance. For building a sound capital base and for self-reliant and self-sustained growth, special emphasis was placed on such industries as coal, oil, steel, electric power, chemicals, machine building and engineering. The role of cottage and small industries was conceived as one of providing larger employment opportunities and of increasing the supply of consumer goods and some producer goods. In keeping with these objectives, Rs 1,726.3 crores were spent on organised industry and minerals in the public sector and Rs 1,050 crores in the private sector, while Rs 236 crores and Rs 272 crores were spent by public and private sectors respectively on the development of village and small industries.

Industrial progress during the *Third Plan* was 7.9 per cent per annum against the estimated 11 per cent. This slow progress was due to: (i) shortages of transport and power; (ii) of imported raw materials, spares and components; (iii) the Indo-Chinese War; (iv) dislocation caused by the Indo-Pak conflict and the consequent disruption in the flow of external assistance; (v) inflationary pressures within the economy; and (vi) the unprecedented droughts leading to shortage of raw materials. As a result, shortfalls in various items ranged from 30 to 60 per cent or more, and physical targets were not achieved in the majority of industries. For instance, shortfall in iron ore, tractors, steel ingots, caustic soda, sugar machinery, woollen fabrics and commercial vehicles ranged from 30 to 60 per cent. The shortfall was 40 per cent or more in the case of newsprint, alloy, zinc, fertilizers, stainless steel, sulphuric acid, paper and mining machinery.

Despite these shortfalls notable progress was made in increasing

import replacement, diversification and the setting up of new industries. The output of petroleum products increased by 48 per cent, of basic metals by 49 per cent, of metal products by 57 per cent, of transport equipment by 50 per cent, of electrical machinery by 71 per cent, and non-electric machinery by 82 per cent. During the Plan period, production was started in a number of new items like watches, timepieces, transistors and diode radio valves, field cameras, magnets, microscope slides, hydraulic presses, potassium permanganate, heavy water, some new chemicals, taxi meters, micrometers, roller bearings, etc. Considerable progress was made in the reduction of import contents by manufacturing raw materials, components and spares indigenously in the case of machine tools, automobiles, electric motors, transformers, switch gears, etc. Substantial addition was made to the existing capacity by starting new complexes in machine tools, metallurgical, mechanical and electrical engineering, petro-chemicals, oil refining, fertilizers, ship building, locomotive and wagon building, aircraft manufacture, drugs and pharmaceuticals. However, the output of traditional industries like sugar and textiles increased only by 13 and 20 per cent respectively. The general index of industrial production increased from 110.6 to 151.9.

The Three Annual Plans aimed at removing strains in the industrial sector which arose during the Third Plan. The emphasis was placed on the full utilisation of the existing capacity and to fill the gaps created by the Third Plan. In other words, the industrial base was to be expanded and consolidated. For this, the tempo of high public and private investment was kept up. Accordingly, the public expenditure on industry and minerals was of the order of Rs 1,575 crores and the private investment Rs 580 crores. Public and private expenditure on village and small industries was Rs 144.1 crores and Rs 250 crores respectively.

There was sharp deceleration of industrial production during 1967-1968 due to an increase in unutilised capacity in a number of industries. As a result, industrial output fell to 0.2 per cent in 1967 and 0.5 per cent in 1968. This was due to consecutive failure of agricultural production and the consequent short supply of agricultural raw materials, and the slackness of demand for a number of capital goods and consumer goods industries, especially cotton textiles, jute manufactures and engineering goods. Some of the other causes of industrial recession were: (a) gheraoes, strikes and lockouts, (b) inadequate foreign exchange for importing equipment and raw materials, and (c) lack of political stability in some of the States after the fourth general election.

The various incentives provided by the State to stimulate production and improvement in the supply situation of capital components and industrial raw materials increased the capacity utilization of many industries. Thus during 1961-69, 1

ncreased by 6.6 per cent. Only in a few industries like machine tools and cables, the production was unsatisfactory.

Reviewing the weakness in industrial planning prior to the Fourth Plan, the *Fourth Plan Report* observed that in certain sectors excess capacity was created, while in certain other industries like fertilizers, the addition to capacity was below requirements. Faulty licensing policy created imbalances in some industrial sectors. Thus uneven growth led to an undue burden of maintenance of imports. The private sector was not cost conscious and did not realize the necessity of reduction in costs because of existence of sellers' market. All these considerations impelled the Planning Commission to have an altogether different approach to industrial development in the Fourth Plan.

The Fourth Plan. The approach to industrial development in the Fourth Plan was related to a number of considerations. The *first* was the need to achieve self-sufficiency necessitating a faster expansion of the domestic production of manufactured inputs for agriculture, and industries relating to metals, capital equipment, petroleum products and chemicals. The *second* was the desirability of dispersed industrial development for creating non-farm employment in smaller towns and rural area. The *third* was the avoidance of technological unemployment among the workers in traditional industries arising from the unregulated spread of capital-intensive modern technology.

The main objectives of industrial development were: (*i*) the completion of investments in relation to which commitments had already been made; (*ii*) increasing existing capacities to levels required for present or future development, in particular for export promotion and import substitution; (*iii*) taking advantage of internal developments or availabilities to build new industries or new bases for industries; (*iv*) increasing industrial production at an average annual rate of 8 to 10 per cent. The policy of investments was directed in such a manner as to lead to industrialization on a large scale and to encourage the emergence of new entrepreneurship and greater decentralization in the ownership and control of industries. Greater emphasis was laid on the establishment of industries in backward regions in order to avoid further concentration in metropolitan towns. For this, the State will provide infrastructure facilities. Facilities were to be provided for foreign collaboration and investment in export-oriented industries and in sophisticated industrial fields. Industrial licensing policy was to be rationalised and the working of public undertakings was to be improved so as to increase their productivity and profitability. Indigenous technology, designs and engineering skills were to be developed. In the sphere of small industries, the emphasis was to be on the improvement of production techniques of producing quality goods, on the promotion of dispersal of

industries and agro-based industries.

The Fourth Plan outlay on the development of industries and minerals was of the order of Rs 3,107 crores which was 19.7 per cent of the total outlay. The public sector outlay accounted for 60 per cent of the total investment in the Plan, and was intended for completing projects already under progress on which investment decisions had already been taken. But new projects undertaken in high priority fields related to fertilizers, pesticides, petrochemicals, non-ferrous metals, iron ore, pyrites and rock phosphate resources. Among other schemes, the Textile Corporation and the Paper Corporation were set up. The Cement Corporation completed two projects under way and established three more projects. A newsprint mill with a capacity of 60,000 tonnes and 2 to 3 paper projects were also planned in the public sector. Plans for the development of electronics industry were given priority Programme for the private and co-operative sectors involved stepping up the current levels of outputs. In the sphere of small scale industries, the development programmes included fuller utilisation of the existing capacity, intensive development of selected industries and a phased programme of modernisation of machinery and equipment in the case of machine tools, foundry and re-rolling etc.

The achieved rate of growth of industrial production in the Fourth Plan period was only 3.9 per cent per annum as against the postulated target rate of 8 to 10 per cent. There were shortfalls in the production of almost all the industrial products.

"While shortfalls occurred in relation to Plan targets in most of the industries, progress was particularly slow in regard to consumer goods industries. Thus, while industries such as vanaspati showed a declining trend, some other important consumer goods such as cotton cloth, sugar and soap recorded an almost insignificant increase in output. The output of capital goods and of important intermediate goods such as coal, electricity, fertilizers, cement and aluminium generally exhibited a rising trend. Nevertheless, in a number of industries, inadequate capacity creation, as well as the shortage of inputs such as electricity, coal and steel, affected the growth of production."¹ There were two types of factors that held back industrial progress during the Plan. First, inhibiting utilisation of capacity; and secondly, those inhibiting the creation of new capacity.

The first, category of factors holding back industrial production were (i) insufficient demand for such industries as coal, machine tools, castings and forgings, railway wagons, textile and other categories of industrial machinery; (ii) shortage and irregular supplies of raw

¹Economic Survey, 1974-75

materials, components and spares for a number of industries; (iii) shortage or erratic supplies of power in northern India; (iv) operational problems in the case of fertilizer, heavy engineering, steel and pharmaceutical industries; (v) transport bottlenecks for coal, cement and other industries in the north-eastern and eastern areas; and (vi) disturbed industrial relations and management problems in the sick mills, steel and other industries in the eastern region. One of the most important reasons had been faulty industrial licensing policy. Licences were issued in excess of capacity targets even in non-essential industries. Foreign collaboration had been permitted in non-essential industries and in a repetitive way. This led to the creation of excess capacity in a number of industries and inadequate capacity in others. The Nineteenth Report of the Estimates Committee of Lok Sabha (April 1972) pointed out that there were 22 engineering and non-engineering industries with an excess capacity ranging from 50 to 95 per cent. It shows that the recession which started in the last years of the Third Plan continued with a respite of only two years.

The second category of factors relating to the creation of new capacity were: (i) delays in the construction phase of a number of public sector projects; (ii) delays in the working out of plan for certain projects; (iii) delays in administrative sanctions; (iv) lack of experienced design and construction firms; (v) labour unrest; (vi) delays in getting domestic and foreign plant and equipment; and (vii) delays in full commissioning due to lack of experienced managerial and technical personnel. Industries to be affected were cement, automobile, tyres and tubes, electric lamps, graphite electrodes, caustic soda, soda ash, non-ferrous metals, petrochemicals, paper and newsprint. Moreover, considerable loss in production resulted in vanaspati, sugar, coal textile and engineering industries due to the closure of a number of units. The reasons were financial crisis, mismanagement, raw material shortages, uneconomic size, demand constraints, labour unrest, and obsolete machinery and technology.

These factors were responsible for the low growth rate of industrial production during the Plan.

In *The Fifth Plan* the outlay was Rs 9,581 crores for the development of industries and minerals. This was 24.3 per cent of the total Plan outlay. The growth rate of output of the manufacturing sector was estimated at 6.9 per cent per annum.

The industrial development programmes during the Fifth Plan had been formulated keeping in view the twin objectives of self-reliance and growth with social justice. The strategy laid down in the Plan was as follows: (a) Emphasis had been laid on the rapid growth of the core sector industries such as steel, non-ferrous metals, fertilisers, coal,

mineral oils, and machine buildings. The development of these industries was vital for the long-run sustained growth. They also helped to save foreign exchange. (b) There was to be greater effort to create surplus capacity in manufactured goods for exports, and towards their rapid diversification. (c) Greater attention was to be paid towards the substantial expansion of production of essential commodities of mass consumption like cloth, edible oils, vanaspati, sugar, drugs and consumer durable goods like bicycles, fans, etc. The production programmes were supported by appropriate distribution arrangements. (d) There was to be restraint on the production of non-essential goods except for exports. But scarce resources were to be diverted to the production of such goods.

Besides, "the other socio-economic objectives of diffusion of ownership, maximisation of employment, dispersed growth of industries and upgradation of scientific and technological capabilities were sought to be achieved through encouragement of village and small-scale industries, development of industrial backward areas and application of science and technology."

These objectives of industrial growth were sought to be achieved by means of: (i) the maximisation of output from existing capacity, (ii) speedy completion of projects already taken up for implementation; (iii) technological improvements and expansion of existing units where substantial additional production could be achieved expeditiously, (iv) the creation of new capacity in accordance with the priorities in the Plan; and (v) the initiation of advance action on long-gestation projects."²

During the Fifth Plan, the growth rate of industrial production was 6.2 per cent as against the target of 6.9 per cent. Major factors responsible for a general setback in industrial production during 1977-78 were power shortage, industrial unrest and demand constraints affecting certain industries. .. The year 1977-78 was among the worst affected in regard to industrial unrest as over two million man-days were lost every month. These factors affected capacity utilisation in a large number of industries."³

The Sixth Plan spent 16 per cent of the total outlay on the development of industry and minerals. The Plan envisaged an annual growth rate of 8 per cent in industrial production. To achieve it, a significant improvement in the functioning of the infrastructure particularly coal, power and railways was emphasised. The Plan gave high priority to the creation of adequate capacity in basic industries such as,

²Draft Fifth Five-Year Plan, 1974-79

³Economic Survey, 1978-79

steel, non-ferrous metals, capital goods, fertilisers and petro-chemicals. The public sector had been assigned a major role in the expansion of these industries. Besides, the private, joint and cooperative sectors were expected to contribute significantly in the production of fertilisers, cement, paper, textiles, chemicals, pesticides, drugs and pharmaceuticals.

In keeping with the Industrial Policy Resolution of July 1984 emphasis was laid on the induction of advanced technology, introduction of processes which would aim at optimum utilisation of energy as also for the establishment of appropriate capacities to achieve economies of scale. Special efforts were made to establish export-oriented units. To protect employment and to provide more employment opportunities, encouragement was given to the growth of cottage, village and small industries. Consistent with the emphasis on technological self-reliance, adequate stress was laid on keeping the technology in use up-to-date. For this purpose, the import of technology was liberalised.

The Sixth Plan achieved a growth rate of 6.8 per cent in industrial production in 1984-85. Performance was particularly encouraging in electricity generation which registered an increase of 12 per cent. Growth in mining was 8 per cent. But the growth in manufacturing was a modest 5.7 per cent.

Review of Industrial Development

Industrial development in India has been playing a crucial role toward structural diversification, modernisation and self-reliance. The progress of industrialisation over the last thirty-five years has been a striking feature of Indian economic development. The process of industrialisation was launched as a conscious and deliberate policy in the early fifties. In pursuance of this policy, large investments have been made in building up capacity over a wide spectrum of industries. Industrial production has gone up by about five times during this period. Apart from quantitative increases in output, the industrial structure has been widely diversified covering broadly the entire range of consumer, intermediate and capital goods. In most of the manufactured products, the country has achieved a large-measure of self-sufficiency, providing the capability to sustain the future growth of vital sectors of the economy primarily through domestic effort. This is reflected in the commodity composition of our international trade in which the share of imports of manufactured products has steadily declined. On the other hand, industrial products, particularly engineering goods, have become a growing component of our exports. The rapid stride in industrialisation has been accompanied by a corresponding growth in technological

and managerial skills, not only for efficient operation of highly complex and sophisticated industrial enterprises but also for their planning, design and construction. Considerable advance has also been made in industrial research and in absorbing, adapting and developing industrial technology.

But these impressive achievements do not reveal the true picture of industrial growth. Industrial growth has not been uniform. The industrial growth rate was about 8 per cent during the initial period of 14 years (1951-65) of our planning, which slowed down to 3.4 per cent during 1965-70, 3.7 per cent during 1970-75, 4.8 per cent during 1975-80, and rose to about 6 per cent in 1980-85. Taking the use-based classification, the available data reveal that the growth rate of capital goods industries declined from nearly 20 per cent per annum between 1960 to 1965 to about 3 per cent per annum between 1965-79, of the basic industries from 10.5 per cent to 6 per cent, of intermediate goods industries from 7 per cent to 3.3 per cent, and of consumer goods industries from 5 per cent to 3.6 per cent.

Many reasons are given for these fluctuations in industrial growth rates. So far as the early period up to 1965 is concerned, industrial development was largely based on import substitution and a captive domestic market. For the deceleration which started from 1965 onward, a number of causal forces can be identified both on the supply side and the demand side. Six exogenous factors are given on the supply side: (i) the wars of 1965 and 1971 which diverted potential public investment into unproductive uses; (ii) the successive droughts of 1965-67, 1971-73 and 1979-80 which restricted the supply of raw materials from the agricultural sector; (iii) supply constraints in the form of infrastructural bottlenecks like power, transport, etc.; (iv) hikes in oil prices in 1974 and 1979 which led to considerable industrial dislocation and severe balance of payments difficulties; (v) deceleration in the growth rate of public sector investment in real terms; and (vi) constraints on private investment in the form of licensing, foreign exchange, taxation and credit policies.

The principal causes on the demand side have been demand deficiency due to a significant decline in the scope of import substitution; inflationary pressures; and the failure to increase the incomes of the poor and erosion of the incomes of the lower-middle and middle classes leading to no new demand for manufactured consumer goods.

As a result of these factors, industries in India have been suffering from imbalances between supply and demand. These imbalances are reflected in the accumulation of inventories, low order books and a decline in waiting lists.

Another drawback of the pattern of industrial development in India has been underutilisation of industrial capacity. Capacity utilisation in certain industries has been as low as 25 per cent. This has been due to structural causes. From the outset, the process of industrial development has been based on import substitution and a closed economy accompanied by rigorous controls and licensing. The emphasis has been on the creation of large capacities in basic and capital goods industries on the presupposition of a rising demand for investment goods from the consumer goods sector. The latter did help in the early phase of industrialisation by import substitution but ultimately failed to create demand due to a fundamentally narrow domestic market. The export sector could not help because of input constraints and low technological level. The overall rate of technological progress in Indian industry was a mere 0.2 per cent per annum in the last two decades, the gap being more pronounced in the basic industry group. Industrialisation by import substitution is useful in the short run, but pursued as a long-term policy, it was bound to lead to sluggish demand for the products of capital goods industries.

Further, the process of industrialisation has failed to absorb sufficient labour force in the secondary sector of the economy. In 1951, the percentage of labour force in industry was 10.6 per cent of the total labour force. This figure had gone up to 11 per cent in 1960 and 13 per cent in 1980. Thus in the course of three decades, this sector has been able to provide additional employment by about 2 percentage points only to the labour force. This is indeed a dismal performance.

Another important indicator of the pace of industrialisation is the change of the share of industry in the total national income of the country. In India, this share went up from 17 per cent in 1948 to 20 per cent in 1960 and to 27 per cent in 1984. No doubt, there has been some improvement in this important indicator but it is still low.

Despite the fact that India is regarded as one of the industrialised countries of the world, its pace of industrialisation has been uneven. The industrial sector has failed to contribute enough to the national income and to provide sufficient employment to the labour force. Further, there has been deceleration in the growth rate of industrialisation since the mid-1960s due to the supply-demand constraints.

INDUSTRIAL POLICY

Just after Independence, the Government of India announced its industrial policy in April 1948. The aim was to have a mixed economy where the public sector and private sector were expected to operate side by side. In pursuance of this, industries were divided into four categories: (a) exclusive Government monopoly in arms and ammuni-

tion, atomic energy and railway transport; (b) Government controlled new undertakings in coal, iron and steel, telephone, telegraphs, aircraft and ship-building, etc.; (c) basic consumer and capital goods industries under State regulation and control; and (d) other industries under co-operative and private enterprise. This policy also underlined the role of cottage and small industries and of foreign capital in industrialising the Indian economy.

This policy remained in operation for eight years but could make little impact on the industrial scene of the country because the First Five-Year Plan was a modest one, especially with regard to investment in the industrial sector.

In April 1956, the Government of India announced a new industrial policy which was necessitated by certain important economic and political developments in the country: the adoption of the Constitution of India in 1950 enunciating the Directive Principles of State Policy; the successful completion of the First Five-Year Plan, the acceptance by the Parliament of the Socialist Pattern of Society in December 1954; and the launching of the Second Five-Year Plan with emphasis on industrialisation.

Industrial Policy Resolution of 1956

The Industrial Policy Resolution of 1956 laid down the various objectives of the industrial policy which have since been incorporated in all the Indian Five-Year Plans for fulfilment. They are: (i) to accelerate the growth rate of the economy; (ii) to speed up industrialisation; (iii) to expand the public sector; (iv) to develop heavy, basic and key industries; (v) to build up a cooperative sector; (vi) to reduce disparities in income and wealth; (vii) to prevent private monopolies and the concentration of economic power in the hands of a small number of individuals; (viii) to undertake State trading on an increasing scale, and (ix) to set up new undertakings and develop new transport facilities by the State.

In pursuance of these objectives industries were classified into three categories. First, 17 industries were kept in the Schedule A which are the exclusive responsibility of the State. They included arms and ammunition, atomic energy, iron and steel, heavy machinery, coal, oil, power, rail, transport, etc. Second, 12 industries were kept in Schedule B which would be progressively State-owned and the private sector would also supplement the effort of the State either singly or with State participation. They included aluminium and other non-ferrous metals, chemicals, drugs, fertilisers, road and sea transport, etc. Third, all the remaining industries whose development was left to the initiative and enterprise of the private sector.

The above division of industries into three categories does not imply that they had been placed in watertight compartments. It was open to the State to start any industry not included in Schedules A and B. Similarly, the private sector was permitted to operate an industry falling under Schedule A.

To encourage the private sector, the Government would provide financial assistance by fostering financial institutions, infrastructural facilities like transport, power, etc. and fiscal and other incentives. Where both private and public enterprises existed in an industry, the Government would give fair and non-discriminatory treatment to the private sector.

The Resolution also laid down that the State would encourage cottage and small scale industries by restricting the volume of production in the large scale sector by differential taxation and by direct subsidies. It also envisaged to improve the competitive strength of these industries by improving and modernising the techniques of production.

For the economy as a whole to benefit from industrialisation, the Resolution emphasised the reduction in disparities in the levels of development between different regions. For this purpose, transport and power facilities would be provided to areas which lagged behind industrially. The Resolution emphasised balanced and coordinated development of the agricultural and the industrial economy of each region for providing larger employment opportunities and attaining higher standards of living.

The Resolution further emphasised on the provision for technical and managerial personnel for the expansion of the public sector and for the development of cottage and small-scale industries. For this purpose, it recognised the importance of providing training facilities in universities and other technical institutions and apprenticeship schemes in private and public enterprises.

The Resolution recognised the need for maintaining industrial peace and for this stressed the role of labour with management and of improving the working conditions of workers and raising their efficiency. It expected public enterprises to set an example in this respect.

The Resolution stressed decentralisation of authority in State enterprises and their management along business lines so that they augmented the revenues of the State and provided resources for further development in new fields.

Lastly, it emphasised the role of foreign capital in India's economic development as enunciated in the Industrial Policy Resolution of 1948.

Its Critical Appraisal. The Industrial Policy Resolution of 1956 has been hailed as the "economic constitution" of India. It was the moving spirit toward industrialisation in the policy framework of the Second,

Third and Fourth Plans. Consequently, it was instrumental in expanding both the public and private sectors side by side.

However, its implementation and results left much to be desired. First, there was no mention of the role of foreign private investment in the Resolution with the result that multinational corporations continued to thrive on the liberal policy of the Government. Second, the Government failed to implement the Resolution pertaining to the small scale sector. Many industries were reserved for the small scale sector but large scale industries manufacturing the same products were allowed to operate side by side. Third, it failed to prevent concentration of monopoly and economic power, and reduce regional disparities. Fourth, there were frequent strikes and other labour problems which failed to bring industrial peace. Lastly, this policy led to the setting up of high-cost capital intensive and import-substitution, industries which resulted in underutilisation of capacity due to input and consumer demand constraints.

Industrial Policy Statement of 1973

The Industrial Policy of 1956 continued to operate till the end of the Fourth Plan. But it was amended on the eve of the Fifth Plan by the

Schedule A of the Resolution of 1956. The public sector was required to make a significant contribution to the expansion of capacity in essential consumer goods industries like cement, paper, drugs and pharmaceuticals and textiles. The cooperative sector and small and medium industries were to be further encouraged and assisted in development of additional capacity in agro-industries and mass consumption goods.

Large industrial houses with assets of not less than Rs 20 crores were allowed to participate in and contribute to the establishment of core industries, industries having linkages with such core industries or industries with a long-term export potential. A list of all such industries classified under 19 groups was given in Appendix I of the statement.

For the first time, a clear cut policy with regard to foreign concerns and subsidiaries and branches of foreign companies was laid down. All such companies were made eligible to participate in the group of 19 industries specified in Appendix I but were ordinarily excluded from other industries. They were to be on the basis of foreign co-operation with Indian entrepreneurs in the fields of equity capital, technology,

The role of the joint sector was reiterated. But each proposal for a joint sector enterprise was to be judged and decided on its merits in the light of Government's social and economic objectives. The joint sector was also to play a promotional role in guiding new and medium enterprises in establishing priority industries.

Its Critical Appraisal. The Industrial policy Statement outlined above was intended to give a further fillip to the pace of industrialisation. Restrictions were placed on big houses to start new industries and the role of cooperative, small, medium and joint sectors was widened. Foreign collaboration in Indian industry was more clearly defined. Though the 1973 Statement was in conformity with the MRTP Act of 1969, yet it failed to curb the entry to big houses into other industries, thereby enhancing monopoly power. This was the outcome of the policy of liberalising industrial licensing, delicensing 21 industries, and permitting monopoly houses and foreign enterprises in 30 other industries to expand beyond the licensed capacity in Industrial Licensing Statements of 1974 and 1975. This Statement did not specify anything about the removal of regional disparities and the setting up of industries in backward areas by industrial houses.

Industrial Policy Statement of 1977

The Janata Government in its short tenure made a new Industrial Policy Statement in December 1977 in order to accelerate the pace of industrial development, to rapidly increase the levels of employment, productivity and income of industrial workers and to have a wide dispersal of village and small industries.

The policy could not be implemented for long because the Janata rule lasted a short while. This, however, does not mean that this policy went to the drain and did not make any impact. District Industries Centres and tiny units have come to stay and so have been the dilution of foreign equity to 40 per cent under the FERA and the policy toward sick units.

Industrial Policy Statement of 1980

With the coming of Indira Government at the Centre in January 1980, a new Industrial Policy Statement was made in July 1980. The 1956 Resolution forms the basis of this statement. The salient features of the new policy are:

Revival of the Economy. It states that the first task of the Government is to revive the economy inhibited by infrastructural gaps and inadequate in performance due to vicious circle of shortages of major industrial inputs like energy, transport and coal.

Set of Pragmatic Policies. A set of pragmatic policies is needed in order to remove the lingering constraints to industrial

production, and to act as catalysts for faster growth in the coming decade within the following socio-economic objectives: (i) Optimum utilisation of the installed capacity; (ii) maximising production and achieving higher productivity; (iii) higher employment generation; (iv) correlation of regional imbalances through a preferential development of industrially backward areas; (v) strengthening of the agricultural base by according a preferential treatment to agro-based industries and promoting optimum inter-sectoral relationship; (vi) faster promotion of export-oriented and import substitution industries; (vii) promoting economic federalism with an equitable spread of investment and the dispersal of returns amongst widely spread over small but growing units in rural as well as urban areas; and (viii) consumer protection against high prices and bad quality.

Revamping the Public Sector. The new policy lays emphasis on improving the performance of the public sector for generating surpluses and employment for further growth of the economy. For this, the efficiency of public sector undertakings will be revived by closely examining them on a unit-by-unit basis and by providing dynamic and competent management. Emphasis will be placed on developing management cadres in functional fields such as operations, finance, marketing and information system.

Role of the Private Sector. The Government will pursue the goal of a vibrant self-reliant and modern economy in which all sectors and segments have a positive role to play. In this context, the Government recognises the need to allow the private sector to develop in consonance with the targets and objectives of national plans and policies but shall not permit the growth of monopolistic tendencies and concentration of economic power and wealth in a few hands.

Economic Federation. The new policy lays down that it will be the endeavour of the Government to reserve the trends towards creating artificial divisions between small and large scale industry under the misconception that their interests are essentially conflicting. As a step towards integrated development, it proposes the concept of economic federalism with the setting up of a few nucleus plants in each district identified as industrially backward, to generate as many ancillaries and small and cottage units as possible.

Nucleus Plants. The Policy has introduced the concept of nucleus plants. A nucleus plant is one which will concentrate on assembling the products of the ancillary units falling within its orbit on producing the inputs needed by a large number of smaller units and making adequate marketing arrangements. The nuclei will also ensure a widely spread pattern of investment and employment and will distribute the benefits of industrialisation to the maximum possible. The nucleus plants will also

work for upgrading the technology of small units.

Industrially Backward Areas. The nucleus plants in industrially backward districts will generate a spreadout network of small scale units and help the faster growth of small scale units. Such a two-way traffic will create an ancillarisation effect in terms of larger employment. In between the nucleus large plants and satellite ancillaries, the Government will promote a system of linkages for an integrated industrial development. The Government will also evolve a scheme of phased development of industrially backward areas through ancillarisation.

Redefining Small Units. In order to boost the development of small scale industries and to ensure their rapid growth, the investment limit in the case of tiny units has been increased from Rs 1 lakh to Rs 2 lakhs, of small scale units from Rs 10 lakhs to Rs 20 lakhs; and of ancillary units from Rs 15 lakhs to Rs 25 lakhs. This is intended to eliminate the tendency to circumvent the present limit by understating the value of machinery and equipment, falsification of accounts or resort to 'benami' units. This will also help in modernisation of many of the existing small scale units.

Financial Support. One of the major constraints to the growth of the decentralised sector has been the difficulties of finance experienced by entrepreneurs in small, cottage and rural sectors. Although an adequate network of institutional finance exists, there is need for coordinating the flow of short-term and long-term capital. The new policy aims at strengthening the existing arrangements and evolve a system of coordination to ensure the flow of credit to the growing units.

Buffer Stocks of Essential Inputs. In order to assist the growth of small scale industry, a scheme for building of buffer stock of essential inputs will be introduced. Special needs of States which rely heavily on a few essential raw materials will receive priority.

Marketing Support. Existing policies regarding marketing support to the decentralised sectors and reservation of items for the small scale industries will continue in the interest of the growth of the small scale industries.

Village Industries. The new policy also aims at promoting such a form of industrialisation in the country which can generate economic viability in the villages. For this, suitable industries in rural areas will be established to generate higher employment and per capita income for the villagers without disturbing the ecological balance. Handlooms, handicrafts, khadi and other village industries will receive greater attention to achieve a faster growth rate in villages.

New Focal Points. In order to generate higher product and employment, the policy emphasises on the creation of new focal points of industrial growth which have the maximum effect on the quality of life.

They will be based essentially on the utilisation of the local materials and the locally available man-power. The Government will encourage both private and public investment towards this direction which will also promote a network of spreadout ancillaries.

Correcting Regional Imbalances. To correct regional imbalances which have been accentuated in the past, the policy stresses the encouragement of dispersal of industries and setting up units in industrially backward areas. Such special concessions and facilities will be offered for this purpose which will be growth-and performance-oriented.

Additional Capacities. The new policy emphasises the need for recognising the additional productive capacity of industries of national importance of those producing articles of mass consumption on a selective basis.

Automatic Growth. In 1975, the Government had permitted 15 selected industries for automatic expansion, limited to 5 per cent per annum or 25 per cent in a five-year plan period or in one or more stages. This was in addition to the normal permissible expansion in production by 25 per cent of the approved capacity. The policy extends this facility to the entire list of 19 industries included in Appendix I of the Industrial Policy Resolution of 1973 as also to 15 other industries, some of which produce items of mass consumption.

Export-Oriented Units. Realising the importance of industrial exports for a favourable balance of trade, the policy provides for sympathetic consideration of requests for setting up 100 per cent export-oriented units.

Advanced Technology and Large Capacity. In order to increase the competitiveness of Indian industry in foreign markets, the policy proposes the induction of advanced technology and creation of large capacity. Such a policy is meant not only to encourage exports but also to enable the industry to produce better quality products at lower costs which ultimately benefit the consumer in terms of price and quality.

Research and Development. The new policy also proposes that the industry must earmark substantial resources for R and D, to constantly update technologies with a view to optimal utilisation of scarce resources, better service to the consumer and achieving greater exports. There is the need for greater emphasis on the latest R and D to the medium and small scale units.

increase their efficiency and cost-effectiveness.

Modernisation Packages. The policy proposes 'modernisation packages' for each industry which will include appropriate location and optimum use of energy, and the adoption of the right kind of scale and technology in order to minimise costs and improve efficiency in the use of scarce materials. The Government's endeavour will be to ensure that the process of modernisation percolates down to small units and villages.

Energy Utilisation and Ecological Balance. The Government will give special assistance, including finance on concessional terms, for such industrial processes and technologies as would aim at optimal utilisation of energy or the exploitation of alternative sources of energy. Similarly, activities which have a direct bearing on and contribute to improved environment and reduce the deleterious effects on pollution of air and water will also be made eligible for special assistance on appropriate terms. In order to preserve ecological balance, new industrial undertakings will not be permitted within the limits of urban centres and steps will be taken to prevent the growth of industry in the metropolitan cities and larger towns.

Streamlining Licensing Procedures. The new policy proposes to speed up the process of examination and decision-making and also to examine the possibilities of further rationalisation and simplification of industrial licensing procedures.

Monitoring System and Data Bank. The policy also proposes that in future the agencies connected with the issuance of letters of intent/industrial licences will not merely concern themselves with letters of intent/industrial licences but will also evolve a comprehensive system of monitoring the implementation of the scheme. For this purpose, it is proposed to build up a data bank on the progress of various licensed/registered investment schemes. The objectives of the data bank will be to have, in respect of all major investment proposals, information regarding the progress in respect of the import of capital goods, the status in regard to the application over terms lending and the physical implementation of the scheme.

Sick Units. The policy proposes to deal firmly with cases of deliberate mismanagement and financial improprieties leading to sickness. To ensure this, a checklist will be introduced to serve as an early warning system for identifying symptoms of sickness. In the case of existing sick units which have the potential for revival, the Government will encourage their merger with healthy units which are capable of managing the sick units and restoring their viability. For this purpose, the existing tax concessions under Section 72-A of the Income-tax Act will be made more liberal. Only in exceptional cases on grounds of public interest, the sick units will be taken over by the State.

Governments.

Industrial Relations. The policy proposes to revive the tripartite labour conference and hopes that through an attitude of mutual understanding and constructive cooperation, it will be possible to establish higher standards of productivity and industrial harmony.

Industrial Pricing. The new policy expects the industry to recognise and accept its social responsibility particularly in terms of maintaining the price line, avoiding hoarding and speculation, and maximising production on an efficient basis. It proposes a dialogue with the industry to ensure that within a stipulated period of time, the prices are rationalised to the benefit of the consumer.

District Industries Centres. This policy proposes to dispense with district industries centres. The Resolution observes that the Government has reviewed the scheme of DIC which has not produced benefits commensurate with the expenditure incurred. The Government, therefore, proposes to initiate more effective alternatives.

Its Critical Appraisal. The new industrial policy statement is a very comprehensive document which tries to cover almost every aspect of the Indian economy relating to industry. It lays emphasis on the social objectives and outlines a set of pragmatic policy in their light for faster growth in the coming decade. It spells out a number of positive steps to encourage and improve the performance of the private sector such as automatic growth of capacity, regularisation of excess capacity, liberalisation of licensing and simplifying licensing procedures, provision of modern packages, import of advanced technology, and provision for R and D. It emphasises merger of sick units with healthy ones and does not favour their nationalisation. Keeping in view the dismal performance of the public sector, it is sought to be revamped through better management. Raising the investment limits in the case of tiny, small and ancillary units is a recognition of cost realities. Creation of a buffer stock of critical inputs for small industries is a step in the right direction. Recognising global energy crisis, the policy stresses the importance of energy utilisation, pollution control and ecological balance.

But critics are not lacking in describing the new industrial policy as "negative" and "evading the critical issues".

First, the regulation of excess capacity favours the Indian ~~monopolies~~ houses and multinational corporations. In the majority of cases installed excess capacity or actual production had been ~~more than~~ double the licensed capacity.

Second, the new industrial policy is contradictory. On the one hand it raises the limit on the utilisation of industrial capacity for the private sector and on the other hand, it insists that monopoly be ~~not~~ allowed to grow.

Third, the redefinition of small scale units is a recognition of cost realities but it will in no way contribute to curbing 'benami' ownership as claimed by the Statement since it has been caused by other factors. However, the benami issue goes strictly beyond the scope of industrial policy. Its incorporation in the paper merely diffuses its focus.

Fourth, the issue of economic pricing of various goods produced in the public and private sectors has been neatly skirted by reference to the need of price stability. An element of differentiation by sub-sectors is required to work out an average level of relatively stable prices. This would require a clear appreciation of social priorities. This is singularly absent in the Statement.

Fifth, the policy proposed the abolition of District Industries Centres without establishing and assigning the reasons of their failure. Instead, it advocated the setting up of nucleus plants. Perhaps the Government realised the utility of the DICs and has wisely thought of not abolishing them. Rather, they have been strengthened and modified. But there is no trace of the nucleus plants so far.

Last but not the least, the new policy is unrelated to the socio-economic objectives it professes to follow. The industrial investment and production have been moving away from meeting the basic needs of the people. The economy has been faced with shortages in the essential and basic consumer goods needed by the masses. But there has been no dearth of goods consumed by the elite. In fact, the increase in their production has been more than proportionate to the increase in the overall industrial production. The criterion for industrial production should be the increased availability of goods for mass consumption. The new industrial policy ignores this vital aspect.

Chapter 69

REGIONAL DISPARITIES AND BALANCED REGIONAL DEVELOPMENT

INTRODUCTION

Every country, whether developed or underdeveloped, has economically advanced and backward regions. Instances are not lacking when a country is divided into regions based on linguistic or racial differences as in the case of India and Belgium. Still others are divided on the basis of natural factors such as in Peru, Columbia and Ecuador where the country is divided into coastal, forest and mountainous regions. Holland is simply divided into western and eastern region. For the purpose of our study, we shall have an economic division of region in India—rich and poor or advanced and backward.

The idea of regional development originated with Stalin. Stalin wanted to develop each economic region in the Soviet Russia in such a way that in the event of an invasion, the occupation of any region by the capitalist powers might not cripple the economic power of the country. So strategic considerations prompted Stalin to develop all regions equally. It was the German bombardment during the Second World War which led to the dispersal of industries in England and attention was focused on the development of backward areas. Earlier the Barlow Commission in 1937 and the PEP (Political and Economic Planning) group in 1939 had stressed the need for dispersal of industries at backward areas. As a matter of fact, all developed countries hate their backward areas and pay attention towards their development. The first attempt to develop a backward area in America was the Tennessee Valley.

Meaning

Before we spell out the meaning of *disparities* and *balanced development*, it is essential to clarify the term 'region'. Region in the Indian context means a State within the Union of India which is formed on historical basis. But for the purpose of planning, it may imply an economic basis. A region may thus be viewed as an economic entity.

State—it may be a district, a town or a village.

Balanced regional development does not mean equal development of regions in the country. It simply implies the fullest development of the potentialities of an area according to its capacity so that the benefits of overall economic growth are shared by the inhabitants of all the regions. Balanced regional development does not mean self-sufficiency in each State or region. Neither does it mean equal level of industrialization nor a uniform economic pattern for each State. Rather, it means widespread diffusion of industry in backward areas so far as it is economically feasible. The ultimate aim is to raise the living standards of the people in backward regions to those of the advanced. It may be through the development of agriculture, industry, trade and commerce. According to Mumford, it is "a problem of increasing habitability—a problem of social and economic renewal."

Need for Balanced Regional Development

Balanced regional development is essential for the following reasons in underdeveloped countries.

1. **To Minimise Backwash Effects.** Underdeveloped countries are characterized by regional differences in income and employment. According to Professor Myrdal,¹ the main cause of regional inequalities has been the strong backwash effects and the weak spread effects in such economies. The genesis of regional inequalities has a non-economic basis which is associated with the capitalist system guided by the profit motive. The profit motive results in the development of those regions where the prospects of profit are high while other regions remain underdeveloped. Myrdal attributes the phenomenon to the free play of market forces. The latter tend to concentrate economic and social overheads in certain regions leaving the rest of the country in a backwater. These inequalities are accentuated by migration, capital movements and trade. Migration of young and active people from the backward regions will favour the advanced region and depress economic activity in the former; capital will move into the developed regions thereby creating capital shortage in the backward. The development of industries in former regions may ruin the existing industries of the latter regions. So the backwash effects being stronger than the spread effects, regional inequalities are accentuated. Thus the need in underdeveloped countries is to minimise the backwash effects through the deliberate State action for a balanced regional development.

2. **To Rapidly Develop the Economy.** Balanced regional development is essential for a rapid development of the economy because the

¹Refer to the Chapter on the *Myrdal Thesis* for a detailed account.

progress of the entire economy depends on the development of all regions in keeping with their factor endowments. As has been aptly put: "The progress of the national economy will be reflected in the rate of growth realized by different regions and, in turn, greater development of resources in the regions must contribute towards accelerating the rate of progress for the country as a whole."

3. **To Develop the Economy Smoothly.** Balanced regional development helps in the smooth development of the economy. If all regions are equally developed they can be mutually helpful to each other. If, however, there are regional inequalities, the low levels of income in the backward regions will retard the development of the developed regions due to lack of adequate demand for the products of the latter. Moreover, balanced regional development also avoids transports and supply bottlenecks and minimise inflationary pressures within the economy.

4. **To Develop and Conserve Resources.** Balanced development of each region helps to develop its resources to the maximum extent. In the words of Dr R. Balakrishna, "The aim of regional development should be to secure maximum efficiency in the utilisation of available resources."² Moreover, when a region develops its resources, at the same time, it avoids their destructive use. The establishment of varied industries leads to the fuller utilisation and conservation of the mineral, forest, agricultural and human resources of the region.

5. **To Maintain Political Stability.** Balanced regional development is needed to maintain political stability in the country. If there are regional disparities in income and wealth, they are the greatest source of danger to national solidarity. This is what led to the formation of Bangladesh as an independent sovereign country. Thus the need to develop all regions equally stems from political and national solidarity.

6. **To Defend the Country.** Regional development is essential for a proper defence of the country from foreign attack. If all regions are equally developed and there is widespread dispersal of industries, the country can face all aerial attacks without disrupting its war efforts. On the other hand, development of a few areas and concentration of industries, in them will bring the entire economy to a stand-still in the event of their destruction by the enemy. Thus balanced regional development is essential for national security and defence.

7. **To Overcome Social Evils.** Regional development helps in overcoming social evils associated with the localisation of industries in big towns and cities. In such industrial centres, there is over-crowding, congestion and noise which undermine the health and efficiency of the inhabitants. Cost of living being high, such centres breed poverty and

²*Regional Planning in India*, p. 73

increase discontentment among the masses. Therefore, the need arises for balanced regional development to avoid these social evils.

8. To Promote and Secure Larger Employment Opportunities. Regional inequalities lead to low income, employment and output levels in underdeveloped countries. With the dispersal of industries in different regions the development of infrastructure in backward regions will not only promote but also secure larger employment opportunities in all areas thereby increasing their per capita output and income.

Regional Disparities and Development Policies in India

The importance of balanced regional development has not been properly emphasized in India since the planning era started. In the *First Plan*, it was mentioned that the rate and pattern of development would take due "considerations of regional balance and sustained growth." But due to the limitation of resources no deliberate effort was made to correct regional disparities.

During the First Plan, regional disparities must have increased because there was wide gap in the per capita development expenditure of States like Mysore (49), Bombay (42), West Bengal (29.4), Orissa (12.4), Bihar (15.1), Rajasthan (15.5), Uttar Pradesh (17.6) and Madhya Pradesh (19.6).

The Second Plan emphasized the need for balanced regional development when it observed "that disparities in level of development between different regions should be progressively reduced." Further, "in any comprehensive plan of development, it is axiomatic that the special needs of the developed areas should receive due attention. The pattern of investment should be so devised as to lead to balanced regional development." A number of programmes were included in the Second Plan for reducing regional disparities. These were: (i) the provision for power, water supply, transport, irrigation facilities in backward areas; (ii) programmes for the expansion of village and small industries in such areas; and (iii) the location of new enterprises in keeping with the need for developing a balanced economy.

In pursuance of this policy, small and village industries were encouraged and industrial estates were located near small towns. A number of industries were located in backward regions of Rajasthan, Andhra Pradesh, Assam, Madhya Pradesh, North Bihar, Orissa and Tamil Nadu. But the Second Plan only touched the fringes of the problem of regional disparities. Despite the highest share of Central contribution to the State plans of Orissa (89.5 per cent), Madhya Pradesh (75 per cent) and Rajasthan (74 per cent) their per capita incomes were Rs 226, Rs 274 and Rs 271, respectively, much lower than the all India level of Rs 309 at current prices. So the Plan failed to

reduce regional disparities.

The *Third Plan* devoted a separate chapter to balanced regional development. The Plan Report, pointed "Balanced development of different parts of the country, extension of benefits of economic progress to the less developed regions and widespread diffusion of industry are among the major aims of planned development." To remove regional disparities, the Plan aimed at the expansion of power, transport, irrigation, education and training facilities and the development of village and small industries. Some backward areas in different States were given special consideration for location of industries. In assessing the needs and the problems of backward areas such factors "as population, area, pressure on cultivated land, extent of commitments on account of large products, and the state of technical and administrative services available" were taken into account. Efforts were also made to set up ancillary industries in those areas where large projects were set up.

But despite these measures, the *Third Plan* failed to solve the problem of regional disparities. No doubt with development, per capita income of the States at current prices increased, but the gap between the richest and the poorest continued to be of the same magnitude. Maharashtra gave away the first position to Punjab which has continued to enjoy this position since then. Haryana took the place of West Bengal, while Tamil Nadu and Andhra Pradesh interchanged their places. Bihar continued to be at the bottom. The main reason for Punjab, Haryana and Andhra Pradesh to gain positions had been the rapid increase in their agricultural productivity and the starting of new enterprises, especially small industries. In the case of other developed States, little had been achieved in the sphere of dispersal of industries. The natural tendency for new enterprises and investments to gravitate towards the already prosperous areas continued to persist.

The *Fourth Plan* had been more realistic in its approach to the problem of regional disparities. The Plan devised a triple formula for removing regional imbalances: *first*, weightage on the allocation of Central assistance; *second*, location of central projects in backward areas; and *third*, adjustment in the procedures and policies of financial institutions so as to provide concessions to small and medium industries in backward areas. The *Fourth Plan* approach to the development of backward areas was carried forward in the *Fifth Plan*.

The *Sixth Plan*, 1980-85, emphasised the need for continuing existing policies for removing regional disparities. In addition, the Plan recommended: (i) Diffusion of skills and technology to backward areas so as to increase productivity. (ii) Strengthening of the weak resource base of such areas by specific programmes for their development. (iii)

Such area-development special programmes would be dovetailed with the overall development plan of the state in order to make them cost effective. (iv) Evaluation and modification of Central and State investment and incentive schemes relating to private entrepreneurs such as concessional finance, seed/margin money, tax reliefs, investment and interest subsidies, etc. (v) To strengthen the arrangements for area planning so as to enable financial institutions, commercial banks and cooperatives to increase substantially their lending in backward regions in agriculture and allied activities as well as for village and small industries. Lastly, the recommendations of the *NCDBA* (National Committee on Development of Backward Areas) were to be considered, modified and introduced.

Estimates of Regional Disparities

Two recent studies again confirmed that in India regional imbalances continued to persist despite the Government's positive approach to this problem. *The Economic and Scientific Research Foundation* showed that over the decade 1960-61 to 1970-71 agricultural income from crop production registered a very high growth rate in the case of already developed States, while it had not been very encouraging in some other States. The national average agricultural income over the period (1960-61 to 1970-71) showed an increase of 142.6 per cent. Punjab topped with a growth of 224.2 per cent, followed closely by Haryana with 223.5 per cent, Gujarat 203 per cent, and Rajasthan 200 per cent. The rate of increase in Mysore, Orissa, J and K and Kerala was also more than the national average, while all the other States were below the national growth rate of agricultural income.

Another estimate has been made by the *Economic Times*² regarding the spread of poverty in different States. It revealed that nine States had more than 48.13 per cent (all India average) of their population below the poverty line in 1977-78. These were Orissa, Tripura, Madhya Pradesh, Bihar, West Bengal, Tamil Nadu, Assam, Uttar Pradesh and Karnataka. The richest State Punjab with per capita Net State Domestic Product of Rs 2,278 had the lowest 15.13 per cent of its population below the poverty line, followed by Haryana (24.84 per cent).

Professor Raj Krishna in his G.L. Mehta Memorial Lecture (May 1980), entitled, *The Centre and the Periphery*, groups inter-State disparities into six categories: (1) indices of income, poverty and unemployment; (2) agricultural indicators; (3) industrial indicators; (4) infrastructure indicators; (5) social service indicators; and (6) resource allocation indicators. His factual findings reveal that 72 per cent of the

total poverty population is concentrated in seven major States: UP, Bihar, West Bengal, MP, Maharashtra, Tamil Nadu, and Andhra Pradesh. These States also contain two-thirds of the total pool of unemployment in the country. On the other hand, States having a relatively high per capita income have a low poverty ratio, and vice versa. Thus, for instance the per capita income in Punjab is nearly 2½ times the per capita income in Bihar, and the poverty ratio in Bihar (55 per cent) is 2½ times the poverty ratio in Punjab (22 per cent). Raj Krishna concludes on the basis of a number of studies that inter-state income disparities showed a small decline in the 1950's, but in the 1960's and early 1970's disparities had been on the increase.

Such agricultural indicators as the growth rate, farm output, consumption of fertilisers, net area sown, and minor, medium and major irrigation potential show that their growth has been extremely disparate among States. Further, poor States are not poor because of their poor endowment of natural resources but due to the insufficiency of investments.

Only two indicators go to prove inter-state disparities in the industrial field. They are the value added by manufacture per capita (VAMP) and the proportion of workers manufacturing (PWM). Of all the States, Bihar is the most backward State in terms of these indicators. VAMP in 1976-77 was the lowest (Rs 78) and so was the PWM (5 per cent), despite the fact that the highest percentage (25 per cent) of aggregate Central investment in the form of public enterprises was located in the State, as at the end of March 1978. On the other hand, States like Maharashtra, Gujarat, West Bengal, and Punjab have high VAMP and PWM, while the share in Central investment in these States is extremely low.

The infrastructure and social service indicators also reveal that there are extreme inter-state disparities in the availability of water, power transport, health, education, etc. States like Bihar, MP, Rajasthan and UP lack in these social services and hence they are backward as compared to Maharashtra, Gujarat, West Bengal, Punjab, Andhra Pradesh, Tamil Nadu and Haryana.

Raj Krishna concludes, "There is growing evidence to show that inter-regional (inter-state and intra-state) disparities in various dimensions of development have remained undiminished in spite of considerable overall development over the last three decades. The States are getting grouped into "bhadrakal" and "shudra" States in respect of their levels and rates of development. In United Nations terminology, a serious "North-South" problem is emerging within the country, though in view of the map of areas identified as "backward" it would be better to call it the "Centre-periphery" problem rather than the N-S problem."

problem. For most of the least developed areas lie in the heartland; while most of the outlying areas seem to be less deprived."

Policy Measures

As a first step, there should be demarcation of backward regions using uniform criteria for an objective assessment of the problem of regional disparities and to remove complaints of a step-motherly treatment by the centre.³

Second, adequate funds should be made available by the Centre to the States for the development of backward areas after studying their need and importance. The responsibility of developing the areas should be entirely left to the States except in the case of very large projects entailing huge investments.

Third, there should be separate development programmes for each region, after their techno-economic surveys. For instance, in the backward regions of UP and Bihar plains where densities of population exceed 1,000 per square mile but agriculture is stagnant and there are hardly any mineral resources, the development programmes should spread from technological breakthroughs in agriculture and water management including flood control and improvement of transport and communications, and of social and institutional reforms. While in regions like famine-prone western Rajasthan which have severe environmental handicaps and limited developmental potentials, the programmes should train the local youth for emigration to adjoining regions of better economic opportunity where projects for the development of natural resources can be started. A number of large projects have been started in the country since the First Plan on the basis of techno-economic efficiency. But in recent years political pressures have led to the setting up of large projects in non-optimal locations without any regard to the costs involved. The only consideration has been F. Perroux's "growth pole" concept. In such situations, regional growth effects of large projects should be carefully studied before embarking upon them.⁴

Fourth, to develop backward regions industrially, the Third Plan and the Fourth Plan emphasised the need for the establishment of industrial estates and Industrial Development Areas where basic facilities like power, water, transport, communications, etc., should be provided, and loan concessions and subsidies given to the entrepreneurs willing to start

³For further details refer to chapters on Poverty in India and Inequalities in India.

⁴V. Nath, "Regional Development Policies," *Economic and Political Weekly*, Special Number, 1971.

projects in backward areas. This was also sought to be achieved through refusal to issue licences in metropolitan areas. The NCDBA reveals in its Report that: (a) the existing policy for industrial dispersal of Central investment subsidy and of concessional finance has benefited a small number of districts, mostly in close proximity to relatively developed industrial centres; (b) with a few exceptions the industrial estate programme has not helped relocate industries away from developed areas; (c) licensing policy is only a negative instrument and cannot by itself promote industrial development in backward areas, and (d) the availability of concessional finance and subsidy has been a significant motivating factor in persuading entrepreneurs to locate their units in backward districts. The Committee has recommended a policy of encouraging location of industry in suitable growth centres with due weightage for such centres in industrial backward States. It has also suggested the establishment of an Industrial Development Authority in such selected centres which will work on a commercial basis to provide the necessary infrastructure and to channel development funds which might be allocated by Central or State Governments.

Fifth, moreover, such a policy of industrial locations should be modified in the light of the techno-economic changes that are taking place in transport, communication, generation and distribution of power and industrial organisation. These changes have widened the concept of industrial locations. Industrial centres are fed daily by workers coming from far away places with the development of road and rail transport. Power is now transmitted over regional or national grids "As a result, most industries have become foot-loose and regional location has acquired greater importance than site location." Moreover, the large land requirements of big plants induce most industries to seek locations in the peripheral areas outside the cities. At the same time, tendency persists for industries to be located near large cities because they can take advantage of entrepreneurial, professional and labour skills, and of proximity to markets. But despite environmental and organisational difficulties of such locations, giant industrial complexes known as magalopolises⁵ have emerged at Delhi, Bombay, Calcutta and Madras. All this necessitates a new industrial location policy whereby large industrial estates should be set up near small towns in backward areas and all facilities are provided initially by the State.

Sixth, there should be an integrated programme for the development of village and small industries in backward areas. The State should provide all basic facilities like power, water supply, transport, communications, training institutions, finance, etc. In the initial stage,

⁵Ibid

consumer goods and processing industries can be started, though manufacturing industries are not ruled out. Such a policy will help to provide larger employment opportunities to the people of the area. Punjab owes much to the development of small industries in backward areas.

Seventh, as we have seen above, some of the most prosperous States in India like Punjab and Haryana have developed through rapid agricultural development. The backward regions of Bihar, UP, Madhya Pradesh, etc., can be developed through improved seeds, fertilizers, pesticides, and above all, by providing irrigation and credit facilities to farmers. Industrial development alone cannot remove regional disparities. Agricultural development is more important in the rural-oriented economy of India, as has been amply demonstrated by the Green Revolution, which has increased the per capita incomes of a number of States considerably.

Eighth, as recommended by the *Working Group on Incentives for Industrial Development in Backward Areas*, "Growing points" should be developed in backward regions. Such a policy envisages the setting up of urban estates which encourage commuting of workers to such towns from neighbouring villages. It will reduce construction costs, foster rural development through the flow of incomes earned from urban jobs and spread new ideas and knowledge of new production techniques and pattern of living. Growing points may also take the form of market towns in backward areas which may benefit the farmer by providing various inputs for modernisation of agriculture, and facilities for marketing and processing of agricultural products and for distribution of durable consumer goods. Punjab and Haryana lead in the establishment of such growing points by building urban estates, market towns, and mini secretariats throughout the States. Other States in India can take a cue from them and develop their backward areas.

Ninth, Professor Raj Krishna suggests that the bulk of public investment should flow in providing infrastructure facilities to backward regions so that they may generate new employment and income-streams for the poor. "Besides an active infrastructure policy, the policy-mix needed for reducing inter-regional imbalances must comprise: (a) the creation of efficient planning and implementation systems at State, district and lower levels, with considerable decentralised powers, and (b) the devolution of much larger financial resources from the Centre to the States and from the States to districts/blocks."

The Dandekar Committee⁶ on Removing Regional Imbalances appointed by the Maharashtra Government has recommended the

⁶*The Economic Times*, 22 July 1984.

establishment of a statutory watch-dog authority to oversee the policy, programme and process of reducing regional disparities in development and to report every year. The Committee proposes that the package schemes of incentives must take into account the factor of distance and compensate sufficiently the areas lying further away for the disadvantage they suffer from. For the purpose of the package scheme of incentives, it recommends taluka, as the unit of classification. The strategy is "development by lifting the bottom rather than putting up the top." If successful, such a policy can be adopted at the national level.

Chapter 70

POVERTY IN INDIA

INTRODUCTION

In less developed countries poverty is abysmal. "Unfortunately, it is not an economic abstraction, it is a human condition. It is despair, grief and pain. It is the despair of a father with a family of seven in a poor country when he joins the swelling ranks of unemployed with no prospects of unemployment compensation. Poverty is the longing of a young boy playing outside a village school but unable to enter because his parents lack a few rupees needed to buy textbooks. Poverty is the grief of parents watching a three-year-old child die of a routine childhood disease because...they cannot afford any medical care."¹ This vivid picture of illiterate, hungry, malnourished, poverty-stricken and survival-oriented people is equally applicable to India.

Measurement of Poverty. The extent of poverty in India is being worked out in terms of the *poverty line*. Boyd-Orr, the first Director General of FAO, was the first person to propound the notion of the starvation line in 1945 which referred to the consumption of less than 2,300 calories per person per day. This idea has been transformed into the poverty line. P.D. Ojha was the first economist to estimate the extent of poverty in terms of the per capita per day expenditure. On this basis, he estimated that 44 per cent of the total population lived below the poverty line during 1960-61. Dandekar and Rath used 'a split minimum calorie intake' to measure the extent of poverty. They estimated that 40 per cent of the rural population and 50 per cent of the urban population was below the poverty line in 1960-61. For the country as whole, the percentage of people below the poverty line was 41 per cent which remained constant between 1960-61 to 1968-69. B.S. Minhas did not accept the split minimum concept between rural and urban areas. Instead, he calculated the poverty line in terms of the minimum per capita expenditure of Rs 240 per annum. Accordingly, he estimated that 59.4 per cent of the population was below the poverty line in 1960-61 which declined to 50.5 per cent in 1967-68. Pranab Bardhan used the same national minimum but a different deflator. He came to the conclusion that 38 per cent of the people lived below the poverty line in 1960-61 but their percentage went up to 45 in 1964-65 and to 54 in

1968-69.

The Seventh Finance Commission did not accept the earlier concepts of the poverty line and instead propounded the concept of 'augmented poverty line'. To calculate it, the Commission added to the monthly private consumption expenditure the per capita monthly public expenditure by each State government on education, health and family

1970-71 was below the poverty line.

The Indian Planning Commission has adopted the 'physical survival' concept of the poverty line. Accordingly, it has defined the poverty line on the basis of minimum nutritional requirements of 2,400 calories per person per day for rural areas and 2,100 calories per person per day for urban areas. This calorie intake is then converted to a monthly per capita expenditure. This method was suggested to the Planning Commission by a study group consisting of D.R. Gadgil, P.S. Lokanathan, B.N. Ganguli, and Ashok Mehta which worked out the national poverty line and came to the conclusion that private consumption expenditure of Rs 20 per capita per month at 1960-61 prices was the bare minimum. This amount was fixed for the Fourth Plan. With the rise in prices in subsequent plans, this amount was fixed at a higher level, though different for rural and urban areas. For instance, the Seventh Plan estimated that 39.9 per cent of the rural population and 27.7 per cent of the urban population in 1984-85 was below the poverty line in India. In fact, 36.9 per cent of the total population was unable to earn Rs 3.50 per day in 1984-85 which was the bare minimum in that year.

A.M. Khurro in the Silver Jubilee Lecture delivered at the Institute of Economic Growth in September 1984 has argued that the estimates of poverty based entirely on personal expenditures linked with caloric values are totally one-sided. "When people's income increases, their food consumption does not increase proportionately and the income elasticity of demand for food has always been less than one, even for the poor." He argues that the consumption of goods and services which characterise all the different non-food items and affect the quality of life has to be taken into account. He, therefore, opines that there is overwhelming evidence to show that the poverty ratio has

of planning. But he laments that the expenditure on nutrition increases only when a given level of consumption has been reached. A hungry and poor person cannot think of

Moreover, it is impossible to calculate the poverty line in monetary terms based on the 'quality of life index' which is itself a vague concept. Therefore, Khusro's view is untenable.

Causes of Poverty

The principal causes of poverty in India are as follows:

1. **Underdevelopment.** The first cause of poverty is the underdevelopment of the country. Due to underdevelopment, 'a large portion of the population has to go without even the most essential needs of daily life because total national income, and hence aggregate consumption, is too small relatively to the enormous size of the population'. It has been estimated by Lester R. Brown that the *annual increase* in the goods and services produced in the United States of the value of \$ 50 billion assuming a 5 per cent rate of economic growth, is equal to *all* the goods and services produced annually in India.

2. **Inequality.** The second cause of poverty is the extreme inequality of income and wealth in India.² In fact, as pointed out by the Planning Commission, underdevelopment and inequality are the twin causes of poverty. It is inadmissible to ignore or underplay either factor.

3. **Low Per Capita Income.** Poverty is also reflected in India by the low per capita income. In 1984, it was \$ 260. During three decades of planning (1951-84) the per capita average growth rate of income had been 2 per cent per annum on the average.

4. **Inadequate Growth Rate.** One reason for the failure of planning to make a major dent on poverty has been the inadequate growth rate. During 1951-84 the growth rate of national income was not more than 4 per cent per annum on the average. Against a high growth of population, these low growth rates of the economy have tended to perpetuate poverty.

5. **High Growth Rate of Population.** The growth rate of population has been very high in India as against the growth rate of the economy. This has failed to bring about the required improvements in living standards. During the first decade of planning 1951-61, the growth rate of population was 21.64, and during the second decade 1951-71, it was 24.8, in the decade 1971-81, it was 24.75. Such a high growth rate of population accompanied by the low growth rate of the economy brings down the per capita income and the per capita consumption expenditure, and thus increases poverty.

6. **Unemployment.** Poverty is also on the increase with the rise in the number of the unemployed. The number of the unemployed persons has been increasing with every Five-Year Plan. The First Five-Year Plan started with a backlog of 3.3 million unemployed persons and at the end

²For data refer to 'Estimates of Inequality in India' in the next chapter.

of the Plan they had increased to 5.3 million to 7.1 million at the end of the Second Plan, to 9.6 million at the end of the Third, to 13.6 million at the end of the Fourth Plan, 20.6 million at the beginning of the Sixth Plan, and 40 million at the beginning of the Seventh Plan.³ But the last figure does not include the growing army of the underemployed. Already plagued with widespread unemployment and underemployment, India is now confronted with one lakh new entrants into the labour force each week.⁴ Thus increasing unemployment and underemployment in families has accentuated poverty.

7. Regional Disparities. It is not that poverty is equally distributed in the country. There are extreme regional disparities accounting for the poverty of the people of certain regions against the prosperity of the others. States like Punjab and Haryana are the richest in terms of per capita income on the basis of their rapid agricultural development; while Gujarat, Maharashtra and West Bengal continue to be the developed States on the basis of tendency for new enterprises and investments to gravitate towards them. But Bihar, Orissa, Rajasthan, Madhya Pradesh, and Uttar Pradesh continue to be backward with the consequent concentration of the majority of poor population.⁵

8. Low Availability of Essentials. Another cause of poverty is the low standard of living which is primarily reflected in the low availability of essential commodities. Despite more than two decades of development efforts, the per capita availability of essential consumer goods has either increased marginally or fallen. The per capita net availability of cereals was 360.4 grams per day in 1956 which rose to 424.4 grams in 1985, and that of pulses fell from 70.3 grams to 39 grams over the same period. The per capita annual availability of edible oils increased from 2.5 kgs in 1956 to 5.5 kgs in 1985 and of cotton cloth it fell from 14.4 metres to 11 metres, of vanaspati it rose from 0.7 kg to 1.1 kg, of sugar it increased from 5 to 10.7 kg, of man-made fibre fabrics from 1 to 3.9 metres, and of tea from 257 to 566 grams, and of coffee from 67 to 74 grams over the same period. Since there is wide disparity in the consumption levels of the top rich and the bottom poor, these national averages do not reflect the true living standards of the poor people. In fact, they may be much lower than their per capita availability.

9. Inflation. Continuous rising prices are another cause of poverty. When prices rise the purchasing power of the money falls and they lead to the impoverishment of the lower middle and poorer sections of the society. This has been happening in India since June 1955 and prices

³For more details refer to the chapter 'Unemployment in India'.

⁴Lester R. Brown, op. cit

⁵For detailed analysis refer to prof. Raj Krishna's estimates in the previous

rose at an annual average rate of about 7 per cent till 1972. During 1972-73 they rose by 20 per cent, during 1973-74 by about 30 per cent, during 1974-75 by 25 per cent, and during 1976-77 by 12.5 per cent. For a brief interlude, 1977-78 and 1978-79, prices rose by only 0.3 per cent and 4.6 per cent, respectively. But they rose by 21.4 per cent in 1979-80 and about 16.7 per cent in 1980-81. However, the consumer prices went up by 9.1 per cent between 1980-85. Thus inflationary pressures have further increased the number of poor people in the country.

10. Low Technology. Low level of technology is also responsible for the poverty of India. Not only manufacturing processes and agricultural production techniques are far below the standards of developed economies, but even marketing skills, the capacity to organise production units, and financial markets are at a low level. As a result of the low technology as broadly defined above, per capita productivity remains at a low level. The return on capital employed and income fail to rise to the desired extent for a higher rate of capital formation thereby keeping the economy in a state of poverty.

11. Capital Deficiency. Another cause of poverty has been the deficiency of capital in the country. This stems from the low per capita availability of capital and the low rate of capital formation. Gross domestic capital formation at market prices increased from 12.7 per cent in 1960-61 to 22 per cent in 1984-85. In real terms, it is much below the level required for the rapid growth of the economy.

12. Social Factors. In India, people are caught in the vicious circle of the poverty due to the prevalent socio-cultural institutions. In order to fulfil social obligations and observe religious ceremonies from cradle to grave, people spend extravagantly. With already low income levels, they either dis-save or borrow. Since savings are negligible, the chances of borrowing are much greater. The high level of indebtedness is both the cause and effect of poverty. Besides, illiteracy, ignorance, fatalism, conservatism born out of sectarian and religious ideas, casteism and joint family system have prevented people from adopting modern ideas and techniques whereby they could increase their incomes and keep the wolf of poverty off their doors.

Poverty Alleviation Programmes

Since poverty and unemployment are inseparable, the policy measures for reducing unemployment are equally applicable for the removal of poverty.⁶

In the 1950s and 1960s, Indian planners believed in the "trickle-down theory". According to this view, poverty alleviation was a gradual and

⁶For details refer to 'Policy Measures' in Chapter 72.

automatic process as the economy grew. So the emphasis was on increasing the growth rate of the economy. Unfortunately, the trickle-down theory failed to eradicate poverty. Rather, poverty increased over the years. This led the planners to adopt four broad categories of programmes in stages for poverty alleviation: First, resource and income development programmes for the rural poor; second, special area development programmes, third, works programme for the creation of supplementary employment opportunities; and fourth, the Minimum Needs Programme (MNP) to improve the consumption levels of the poor in order to raise their productive efficiency.

In the first category, a number of programmes have been in operation in the country, some since the 1970s and some introduced recently. They aim at improving the economic conditions of the rural poor so that their incomes may increase. Special programmes in this category up to the Fifth Plan had been Small Farmers' Development Agencies (SFDA) and NFAL. But these programmes did not cover the whole country and their operations overlapped. They were operating simultaneously in the same area for the same people. Moreover, they had different funding patterns and did not cover the whole country. They were simply subsidy giving programmes and failed to develop resources and incomes of the rural poor. So from the Sixth Plan one single integrated programme for the whole country was introduced. It is known as the Integrated Rural Development Programme (IRDP). It aims at improving the lot of the rural poor consisting of the landless labourers, small and marginal farmers, rural artisans and other workers. IRDP includes creation of productive assets and/or appropriate skills and vocational opportunities backed by services to increase production and productivity. Those having some land are provided inputs like water, improved seeds and fertilisers to improve the productivity of land. To augment the incomes of the landless and the landholders, the programme aims at diversification

of agriculture. The programme also includes processing and local resources and improvement of post-harvest facilities. The incomes of the rural poor have increased considerably. The rural poor are encouraged to take up non-farm based designs and marketing facilities. In the Sixth Plan, Rs 4,500 crores were made available for IRDP with a 20 per cent subsidy component.

In the second category are included such programmes as Drought-Prone Areas Programme (DPAP) and Desert Development Programme (DDP). These special area development programmes aim at optimum utilization of land, water and livestock resources, farm forestry, dairy development and development of subsidiary occupations in drought-

prone and desert areas to raise the incomes of the weaker sections of the society.

In the third category are included such employment generation programmes as NREP, RLEGP, TRYSEM and the Food for Work Programme which aim at creating supplementary employment opportunities during lean employment periods of the years.⁷

Lastly, there is the Minimum Needs Programme which aims at improving the consumption levels of the poorer sections in order to raise their productive efficiency. This includes the provision for elementary education, health, water supply, roads, electrification, housing to landless labourers, nutrition, and improvement of urban slums. Various components of this programme such as construction of roads, water supply and housing are also meant to generate additional employment and income to the poor.

For better implementation and results of the poverty alleviation programmes in force, the Seventh Plan aims at achieving cost-effectiveness and minimisation of leakages by imparting the necessary flexibility in the choice of activities, and by integration of the various programmes. To achieve these, the Plan adopts a three-pronged strategy: (a) Poverty alleviation programmes would be formulated and implemented in a decentralised manner with the participation of people at the grassroots level through village panchayats, panchayat samities, Zila parishads, etc.; (b) better planning at the district level involving various disciplines or departments, tighter organisational set-up to ensure optimal use of resources and closer monitoring; and (c) taking up group-oriented activities for beneficiaries, to the extent possible, through the promotion of cooperatives, registered societies, informal groups, etc. so that the economies of scale, inherent in some of these activities, especially in the provision of services, are fully realised while, at the same time, group initiative and effort of the poor are promoted. Further, voluntary agencies would be increasingly involved in the formulation and implementation of poverty alleviation programmes, especially for ensuring greater participation of the people.

Conclusion. But all the programmes discussed above have over the years achieved their objectives only partially. According to Government estimates, 40 per cent of the beneficiaries managed to increase their income above Rs 3,500 a year per family in 1984 alone. This amount being the 1979-80 poverty line per family. But this estimate is on current prices without making adjustment for the price rise since 1979-80. Dr Nilkanth Rath in his Dr T.A. Memorial Lecture said that less than 10 per cent of the poor against the 20 per cent target had been raised above

⁷For Details of these programmes refer to 'Government Measures' in Chapter 72.

the poverty line under the IRDP during the Sixth Plan, without creating any durable community assets. But this was also a gross overestimate because it ignored the price rise and bank loan repayment during the Plan.

Therefore, the pace and manner in which the problem of poverty has been dealt with so far leaves much to be desired both qualitatively and quantitatively. Only a small fraction of the rural poor has been covered effectively by these poverty alleviation programmes. A sizeable portion of those covered have some land. The landless and the rural artisans have been almost left untouched.

In the area development programmes, little has been done in soil and water conservation, afforestation and pasture development. Agronomic practices and cropping patterns have not been introduced in backward regions. Marginal lands continue to be overexploited through crop husbandry. The emphasis of these poverty alleviation programmes is more on expenditure incurred than on performance. The constraints from which these programmes suffer have not been financial but organisational inadequacy and lack of clear cut plan of development and proper monitoring. Little attention has been paid to psychological, political, bureaucratic and economic forces that have been at work to foil these programmes.

Chapter 71

ECONOMIC INEQUALITIES IN INDIA

A pertinent question that has often emerged in the context of Indian economic planning is: Whether the gap between the haves and have-nots has narrowed or widened since the launching of the planned economic development in India? To examine this, a number of governmental, institutional and individual studies have been made from time to time. All studies have arrived at the conclusion that this gap has actually widened and there has been a concentration of wealth and economic power in a few hands to the detriment of the underprivileged and the common people. Before we analyse the findings of these studies, the causes of the perpetuation of inequalities, and suggestions to overcome them, it is instructive to have a theoretical interlude on the compatibility of growth and equality (or income distribution).

GROWTH VERSUS EQUALITY

According to western economic thought, the goals of economic growth and income distribution are incompatible. It emphasizes the maximisation of the growth rate of the economy leaving the distribution of income untouched. To use Professor Lewis' metaphor, it is like riding the horse of economic development and leaving the horse of economic equality to feed for itself. This had been the experience of 18th century England, 19th century Western Europe and early 20th century Japan where wealth and income inequalities led to large savings on the part of the wealthy classes who used them for productive investments.

Earlier, the classical economists were also in favour of income inequality. According to them, income equality discourages savings. Income equality means a higher income for the working classes and a rise in their consumption. This, in turn, means a rise in population. The classics, therefore, believed that inequalities of incomes were necessary to provide the incentive for economic growth.

But Marx thought otherwise. According to him, it was income inequality that would bring the doom of capitalism. He argued that income inequality meant less consumption for the poor masses. This would lead to unsold stocks of goods and to a stop of further production. In this way, there would be cumulative over-production and under-

consumption and the capitalist economy would move towards secular stagnation.

It was Lord Keynes who pleaded for income equality to sustain economic growth. He wrote: "In contemporary conditions the growth of wealth far from being dependent on the abstinence of the rich as is commonly supposed, is more likely to be imposed by it. One of the chief social justifications of great inequality of wealth is, therefore, removed." According to Keynes, a society which saves more due to inequalities of income and wealth, brings secular stagnation, because inequalities would reduce its consumption capacity and bring contraction in demand. Ultimately, it would lead to fall in production and slowing down the economic activity. Keynes, therefore, favoured income equality which might lead to sustained economic growth via the multiplier effect.

Of the post-Keynesian economists, Professor Kurihara has carried Keynes' views further. Keynes believed that encouraging consumption is alternative to saving. But Kurihara shows that they are complementary. When there is income inequality it leads to excessive thriftness and fall in inducement to invest as a result of declining marginal efficiency of capital. Economic growth requires the balancing of the two forces which is possible in a "high-wage, low-profit economy, and investment-free society."

In the 1950s and 1960s, the thinking on income equality and growth was influenced by Kuznets' U-shaped Curve. Kuznets suggested on the experience of the developed countries that historically there was a tendency for income inequalities to increase first, and then to be reduced as countries developed from a low level. Accordingly, it was believed that a high degree of inequality in the distribution of income had a favourable effect on economic growth in the early stages of development and as development gained momentum, its benefits would automatically "trickle down" to the lower income groups over the long run. So this approach emphasised the maximisation of the growth rate of the economy by building up capital, infrastructure and productive capacity of the economy, and leaving the income distribution untouched.

Lewis was the principal supporter of this view. He outlined the process through which income inequalities led to the economic growth of the 18th century England, the 19th century Western Utopia and the early 20th century Japan. He advocates the same for underdeveloped countries. Lewis contends that voluntary savings form a significantly large share of national income only where inequality of income distribution is such that profits are a relatively large share of national income. When growth is taking place, the modern sector grows faster

than the traditional sector and the relative share of profits in national income also increases. This tends to perpetuate income inequalities. In the long run, however, when employment opportunities increase all round and the traditional sector also develops, the distribution of income tends to stabilise. But this is an automatic process and is only a side-effect of the growth of the economy.

According to Lewis, the share of profits in national income should be increased by expanding the capitalist sector of the economy deliberately. For this, he suggests that those who live on unearned incomes, particularly ground rents, should be taxed heavily and the proceeds given to capitalists who live on profits. Profits can also be increased by giving subsidies and tax rebates by providing adequate supplies of raw materials and capital equipment, by restricting imports of competitive products, by controlling wages and trade unions, and by government purchases of the goods of the industries. Thus it is contended that larger profits accruing to the capitalist sector will mean larger savings which will be invested for larger capital formation and higher growth rates.

But this is not a correct view in the context of developing countries. Perpetuation of income inequalities is no condition for rapid economic growth. Unlike the developed countries, the conditions in developing countries are such that income inequalities are not necessary for their economic development. A number of arguments are given in support of this view.

Perpetuation of income inequalities is not feasible under the system of parliamentary democracy and the political climate prevailing in such countries. The policy of raising profits to increase savings for capital formation may lead to social unrest and may even fail to produce socially desirable investment since the profit-making classes are not necessarily increased in the welfare of the masses.¹ Thus income inequalities may hamper economic development.

The policy of increasing profits of the capitalist sector through subsidies, tax rebates, controlling wages and trade unions, etc. creates vested interests and leads to maldistribution of resources within a developing economy.

Moreover, there is no guarantee that the wealthy classes in such economies will utilize their savings in productive channels. Rather, businessmen, landlords and other rich elites spend much of their incomes on conspicuous consumption, gold hoards, jewellery, estates and expensive houses, speculation, foreign travel, etc. In certain cases, it leads to the flight of capital in the form of deposits in bank abroad and hoardings of foreign currencies and gold in the safe vaults of Western

¹D.R. Gadgil, *Economic Policy and Development*, p. 181.

banks. Thus such savings and investments do not serve any fruitful purpose. They do not add to the productive resources of the economy but are a drain on them.

On the other hand, the perpetuation of income inequalities brings more harm to the economy. Inequalities retard development. Therefore, prudence demands that efforts should be made to raise the incomes of the majority of the people who are poor.

Further, inequalities lead to great economic waste. The waste is caused by inefficient management. Businessmen who are rich may be efficient entrepreneurs themselves, but their children who inherit their wealth may not be as efficient as their fathers. Thus starts a process of inefficient management thereby lowering the rate of economic development.

Another cause of economic waste due to inequalities is loss of human capital. As the majority of the people are poor with low levels of income and low levels of living, they cannot provide themselves with nutritional diet, formal education and training. Consequently, their productive efficiency is low which, in turn, leads in a slower growth of the economy. Thus the reduction of inequalities and raising the incomes and levels of living to the poor would raise not only their productive efficiency but also that of the economy.

Again, with the increase in the income levels of the poor the demand for such locally produced necessities as food products, clothes, etc. will increase. This increased demand for local products shall encourage their production thereby leading to larger investment and higher capital formation and economic development within the economy.

Thus the belief that income inequalities propel the engine of economic growth does not hold in the context of the developing countries aiming at a welfare state. The widening gap between the rich and poor can no longer be left to the market forces. It has to be narrowed by deliberate state action in five ways: *First*, maximizing the growth of GNP through raising savings and resources more efficiently, with benefits to all groups in society. *Second*, redirecting investment to the poor in the form of education, access to credit, public facilities, etc. *Third*, redistributing income to the poor through the fiscal system or through direct allocation of consumer goods. The policy of tax-financed transfers from the rich to the poor may raise the income of the poor, but if it reduces savings and capital accumulation by the rich; it may ultimately lower the incomes of the poor. *Fourth*, a transfer of existing assets to the poor, as in the form of land reforms. *Fifth*, a long-term population policy has important influence on both the distribution of incomes and consumption levels of the poor. Investments in the basic education and economic development of the poor contribute to a

reduction in fertility and hence indirectly to better income distribution.² Whatever policy measures may be adopted, there has to be a compromise between the objectives of growth and equality. In other words, if the developing countries wish to ride simultaneously the two horses of economic development and economic equality, they have to move cautiously.

The achievement of these twin objectives has been one of the main planks of economic policy in India. One of the directive principles of the Constitution of India lays down that "the state shall, in particular, direct its policy towards securing that the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment." This principle of reduction in inequalities became one of the objectives in the subsequent Five-Year Plans for the economic development of the country.

Estimates of Inequalities in India

The various estimates with regard to the distribution of national income reveal that the inequalities of income and wealth have widened rather than narrowed as a consequence of planned economic development in India.

The Mahalanobis Committee on *Distribution of Income and Levels of Living* (1964) revealed the following pattern of income distribution in the country based on the estimates of the Reserve Bank of India, of Iyengar and Mukherjee and of the National Council of Applied and Economic Research.

The RBI estimates show that during the period 1953-54 to 1956-57 the top 5 per cent of the total households shared 20 per cent of the national income and the bottom 20 per cent only 8 per cent of households. In addition, the rural and urban breakdown shows that the degree of inequality is greater in urban than in the rural sector. The estimates of Iyengar and Mukherjee also reveal wide disparities between the bottom 20 per cent and the top 10 per cent and 5 per cent of the total households, the respective shares in national income being 8.5 per cent, 25 per cent and 17.5 per cent for 1956-57. The NCAER estimates for 1960 shows that the gap between the top and the bottom had widened much. In the urban sector, the bottom 20 per cent shared 4 per cent of the national income while the top 10 per cent and 5 per cent received 42.4 per cent and 31 per cent of national income respectively. In the rural sector, the share of the bottom 20 per cent was the same as for the urban sector (4 per cent) while the top 10 per cent had 33.6 per cent of the national income. This again revealed that the degree of inequality

²H.B. Chevrey and others, *Redistribution with Growth*, 1974.

was somewhat less in rural than in the urban sector.

The Mahalanobis Committee further revealed on the basis of the data prepared by the NCAER about the share of households in aggregate income before tax for 1960 that the share of the bottom 10 per cent of households in aggregate income was only 1.3 per cent in the urban sector and 0.7 per cent in the rural sector; while that of the top 10 per cent of households was 42.4 per cent in the urban and 33.6 per cent in the rural sector. Further, the lower 50 per cent of the households had 17.5 per cent share in aggregate income in the urban sector, while the top 50 per cent of the households had 82.5 per cent of the aggregate income. The comparative figures for the rural sector for the two fractile groups were 20.7 per cent and 79.3 per cent respectively. The Mahalanobis Committee concluded on the basis of these findings: "The wide range of variation that one finds between the top and the bottom tenths of population clearly reveals the existence of concentration of economic power in the country in its generalised form. And, the conclusion seems justified that even after ten years of planning and despite fairly heavy schemes of taxation on the upper incomes, there is a considerable measure of concentration in urban areas. This would also hold good for rural incomes as, in their cases, even the burden of taxation is not heavy on the higher ranges of incomes."¹

Another estimate of the growth of inequality in India has been made by Dandekar and Rath for the period 1960-61 to 1967-68 on the basis of the *per capita consumer expenditure*. Their study revealed that the *per capita national consumer expenditure* increased by 3.9 per cent over the period 1960-61 to 1967-68, the *per capita urban consumer expenditure* increased by 2.4 per cent, and the *per capita rural consumer expenditure* by 3.8 per cent. To take the different sections of the *rural population* first, over the period of the study the *per capita consumption* of the 20 per cent poorest increased by less than 2 per cent and that of the poorest 5 per cent actually declined by about one per cent. The consumption of the *lower middle sections* (20 to 40 per cent) increased by 2.2 to 2.6 per cent, that of the *middle sections* (40 to 60 per cent) increased by 3.7 to 4.1 per cent, and of *upper middle and the richer sections* (40 per cent of population) increased by 4.4 per cent. Thus the process of development during the period 1960-61 to 1967-68 affected different sections of the rural population differently. It benefited the upper middle and the richer sections much more than the middle, the lower middle and poorer sections. Thus Dandekar and Rath observed, "Under the circumstances, a certain amount of growth of inequality is inevitable." To take

¹Report of the Committee on the Distribution of Income and Levels of Living p. 24
italics mine.

the different sections of the *urban* population, during the seven years, per capita consumption of the *lower middle* and *poorer* sections (40 per cent of urban population) declined; that of the *middle* sections (40 to 60 per cent) increased by 1.0 to 3.0 per cent, of the *upper middle* and the *richer* sections (40 per cent) by 4.7 per cent. Dandekar and Rath concluded that during the period under review, the per capita private consumer expenditure increased by less than half a per cent per annum. Moreover, the small gains were not equitably distributed among all sections of the population. The condition of the *bottom* 20 per cent *rural* poor remained more or less stagnant; of the *bottom* 20 per cent *urban* poor definitely deteriorated; and for another 20 per cent of *urban* population, it remained more or less stagnant. Thus, while the character of rural poverty remained the same as before, the character of urban poverty deepened further.⁴

Distribution of land holdings is another measure of inequality. According to the Mahalanobis Committee the top 1 per cent of the households owned 17 per cent of all land holdings in India in 1953-54; the top 5 per cent owned 41 per cent; the top 10 per cent owned 58 per cent; and the top 20 per cent owned 77 per cent of land holdings. The corresponding figures in 1959-60 were 16 per cent, 40 per cent, 56 per cent and 75 per cent respectively. These figures revealed that despite the enactment of land reform measures there was no appreciable reduction in inequality in land holdings, and while 20 per cent of the people did not own any land at all, land holdings were highly concentrated in the hands of a small minority of people.

A survey on the distribution of assets by RBI (*All India Debt and Investment Survey, 1971-72*) on rural households showed that 20 per cent of households, each having less than Rs 1,000 of assets, account for less than 1 per cent of all rural assets, while 4 per cent with asset-values of Rs 50,000 or more own over 30 per cent.

Finally, we take up the concentration of wealth and power in the private corporate sector as a measure of inequality. Hazari in his study *The Corporate Private Sector in India* (1966) on the growth of 20 business groups for the period 1951-58 came to the conclusion that Tata, Birla, Martin Burn, Dalmia and Sahu Jain had 17.91 per cent of the total share capital of non-government companies in 1951 which rose to 22.34 per cent in 1958. The comparable ratio for their complexes went up from 21.58 per cent to 26.60 per cent. Their gross capital stocks increased by more than 100 per cent while that of the remaining 16 business groups by about 50 per cent. Tata and Birla, the two largest complexes, had nearly 1/5th of the gross capital stock of non-

⁴V.M. Dandekar and Nilakanth Rath, *Poverty in India*, 1971.

government public companies in 1958. Thus there had been increased concentration of economic power in the private corporate sector during the first eight years of planning in India.

The Mahalanobis Committee carried this study further in the case of 21 industries to the sphere of production up to 1960. It revealed that 12 top units produced more than 50 per cent of the total output of such industries. In 4 of these cases, a single unit produced more than 50 per cent of output. Further, in 1960-61, bigger companies with paid up capital of Rs 50 lakhs and above formed 1.6 per cent of all companies but had 53 per cent share in the total paid up capital, while the number of companies having paid up capital of less than Rs 5 lakhs and constituting 86 per cent of the total number of companies had only 14.6 per cent share in the total paid up capital.

The report of Monopolies Inquiry Committee (1965) relating to the year 1963-64 studied 75 groups comprising 1536 companies with 44.1 per cent total paid up capital and 46.9 per cent of assets of all the companies in the country. Regarding product-wise concentrations, it studied 100 products of top three producers and found that 65 products had high concentration (75 per cent or more), 10 medium (60 to less than 75 per cent), 8 low (50 to less than 60 per cent), and 17 products less than 50 per cent concentration. The Commission came to the conclusion that concentration of economic power in a few hands "affects economic growth itself in the long run and inhibits it, for such growth is not sufficiently widespread to be self-generating."

The *Economic Times*⁵ has carried forward the findings of the MIC and the LPIC Reports further. Between 1963-64 and 1975-76 significant upward shift in rank in terms of increase in assets took place in the case of Mafatlal from 10 to 3, Sarabhai from 14 to 9, Kirloskar from 16 to 11, Parry from 18 to 13, and Scindia from 9 to 5. In 1963-64, the Birlas ranked number 2 and the Tatas were at the top. In 1975-76, they changed their ranks, Birlas being at the top and Tata following them closely.

The Department of Company Affairs in its study of the assets of top 20 industrial houses revealed that their total assets increased from Rs 1,319 crores in 1964 to Rs 5,119 crores in 1978, a rise of 74.2 per cent. The Birlas topped with total assets of Rs 1,171 crores followed closely by the Tatas with assets amounting to Rs 1,102 crores in 1978.

A recent study by *The Economic Times*⁶ reveals that the total assets of 101 private sector corporate giants grew at a fast rate of 16.3 per cent in 1984-85 as against 9.4 per cent in 1978-79, their sales (net of excise

⁵The Economic Times, 26 March, 1986

⁶25 May 1981

duty) recorded a growth rate of 15.7 per cent as against 11.7 per cent, and gross profits rose by 22.3 per cent as against 15.3 per cent over the period.

It is apparent from the findings of the various reports and studies that far from reducing inequalities in income and wealth, planning for three decades in India has actually accentuated them.

Causes of Inequalities in India⁷

The prominent causes for this unequal distribution of income and wealth in India are discussed below:

1. **Poverty.** One of the basic causes of unequal distribution of income and wealth in the country is poverty which is reflected in low consumption levels, low per capita income and low standard of living of the mass of the people. Despite more than two decades of development planning, hunger, malnourishment and suffering from chronic and debilitating diseases are still the bane of the majority of population in India.

2. **Inadequate Development.** Another cause of the low levels of income has been inadequate economic development, according to Mahalanobis Committee. The growth of the economy has been slow and unsatisfactory during the planning era. It was 3.6 per cent per annum during the First Plan, 4 per cent in the Second Plan, 2.2 per cent in the Third Plan, 3.4 per cent in the Fourth Plan, 5.2 per cent in the Fifth Plan and 5.4 per cent in the Sixth Plan. Such low growth rates of economy have tended to keep the levels of income low for the vast majority of the people.

3. **Economic Concentration.** As the above data pertaining to the extent of economic inequalities in India reveal, there has been concentration of economic power in the hands of few business houses, as a result the rich have become richer and the poor poorer. As pointed out by Dandekar and Rath, "The small gains of development seem to be monopolised by the upper middle and richer sections of the society leaving the lower middle and the poorer sections more or less untouched by the process of development." The Mahalanobis Committee was more emphatic when it observed: "The working of the planned economy has contributed to the growth of big companies in Indian industry." Some of the reasons for the concentration of economic power have been haphazard industrialization, faulty licensing policy, interlocking directorate, and inter-company investments, etc.

4. **Tax Evasion.** The Mahalanobis Committee also listed tax evasion as one of the causes for inequalities in income and wealth. The upper

⁷For data, refer to the 'Causes of Poverty in India' in the previous chapter and 'Estimates of Inequalities' given above.

middle and richer sections of the society have been manipulating to evade taxes and amass wealth through black money thereby becoming richer. On the other hand, the lower middle and the poorer sections of the society are being reduced to abject poverty under the pressure of ever mounting indirect taxes on necessities with every budget since the beginning of the planning era in a country.

5. **Inequitable Distribution of the Means of Production.** Inequalities of income and wealth result from inequitable distribution of the means of production. One of the means of production in India is land. This is, in fact, the major one because more than 80 per cent of the people who live in rural India are dependent on land in one way or the other. But as seen above, in case of distribution of land holdings in India, 20 per cent of the people do not own any land and a large majority have small uneconomic holdings, while a small fraction of the rural population owns large holdings. The former are being starved while the latter are becoming richer, thereby accentuating inequalities.

The second means of production is the capital. People being poor, capital is scarce in the country. But it is concentrated in the hands of a few rich who use it to their advantage. In rural India, the few rich landlords have been able to mechanise agriculture by using tractors, pumping sets, fertilizers, improved seeds, etc. while in urban India the few business houses which possess the majority capital have used it fully to their advantage in amassing more wealth, as the estimates reveal. As pointed out by Dandekar and Rath, in the face of economic forces operating in an economy with private ownership of the means of production, *inequalities are bound to persist*.

6. **Capital-Intensive Technology.** One of the reasons for the accentuation of inequalities in India has been the use of capital-intensive technology. This is the case not only with private enterprises, but also with public enterprises. "In a capital short economy, the adoption of an advanced industrial technology results in employing a few workers with the aid of a great deal of capital while denying a host of others any capital to employ themselves with." Thus the use of capital-intensive technology in the private sector of the economy, both rural and urban, had led to greater concentration of wealth and income in the hands of a few and deprived the masses of larger and gainful employment opportunities.

7. **Unemployment and Underemployment.** One of the prominent reasons for this unequal distribution of income is widespread unemployment and underemployment. More than two and a half decades of planning has failed to relieve unemployment and underemployment in the country. Rather, it has accentuated them. Inequitable distribution of the means of production, capital-intensive technology, inadequate

development etc., are some of the factors responsible for increasing unemployment and underemployment. As a result, the poor are becoming poorer.

8. Low Productivity. Low productivity per unit of labour is also another factor for increasing inequalities in India. Low productivity keeps the income levels of the people low. A worker with low productivity cannot earn more and thus remains poor. And the gap between the rich and the poor continues to widen because the rich have been able to increase their incomes continuously.

9. Population Growth. The phenomenal growth in population during 1951-81 has been another factor in increasing economic inequalities in the country. During these three decades, population increased on an average at the rate of 2.2 per cent per annum. This increase has been primarily shared by the lower middle and the poorer sections of the society. With already low levels of income, the increase in family members has further reduced their incomes and brought them to the brink of poverty line. The worst hit are the landholders who have been burdened by the growth pressure of population on their tiny holdings, whereas the large landholders are affected the least because of larger resources. This has forced the former to sell their meagre holdings to the latter. Thus further accentuating income and wealth inequalities.

10. Inflation. One of the prominent causes of income inequalities has been the spiral inflation since the end of the first Plan in India. Whereas the prices have been rising continuously, the income of the fixed income groups has failed to increase proportionately. As a result, the white collar middle class, the blue collar working class, the landless agricultural workers and the small landholders are being reduced to abject misery and poverty. On the other hand, the big landlords, the businessmen, the profiteers, the speculators, the blackmarketeers, the traders and the industrialists have been earning larger incomes and amassing wealth. Thus inequalities of income and wealth are on the increase with the continuously increasing prices.

Policy Measures

The policy measures, aiming at reduction in income and wealth inequalities, should be redistributive in nature. They should work towards the general socialisation of the means of production, the removal of economic concentration, the increase in the income levels of the mass of the people. All measures serve a dual purpose: to redistribute income, and to remove poverty. In fact, the problems of poverty and income inequalities are so interwoven that when one is solved the other is simultaneously resolved. Some of the policy measures are discussed below:

1. Land Reforms. Since the majority of people live in rural areas and are dependent on agriculture, speedy implementation of land reform legislation is essential for equitable distribution of income and wealth. As a *first* step, there should be redistribution of the available land among the landless agricultural workers and those having very little land. It requires the implementation of legislation on ceiling on land holdings. *Second*, the tenurial conditions should also be improved. *Last*, but not the least, land reforms should also embrace such measures as the provisions for cheap and adequate credit facilities, better seeds and fertilisers, and marketing of agricultural produce. Thus land reform measures will raise the total produce and hence the share of the cultivator in the total produce. In this way, his income will increase.

2. Employment Opportunities. The principal instrument of policy relating to income distribution is the creation of additional employment opportunities, both in the rural and urban sectors. To provide employment opportunities to the unskilled labour in rural areas suitable public works programmes should be designed and organised. Intensification of cropping practices and establishment of agro-based and rural industries can also help in providing gainful employment to the agriculturists.

As regards the educated unemployed, while the emphasis should be on labour-intensive industrialization, the need for providing self-employment opportunities should not be overlooked. The latter require on the job or professional training, financial help from the banks and other financial institutions, and facilities for raw material supplies and marketing.

3. Wage Policy. For an effective income distribution there should be a national wage policy, both for the organized and the unorganized sectors of the economy. It requires ensuring not only minimum wages for industrial workers but also increasing the share of wages in total value added. But all increases in wages should be closely related to increases in productivity in order to avoid inflationary pressures following the former. It is, however, not possible to follow such a wage policy in the unorganized sector where a small amount of irregular and intermittent employment is enveloped in a mass of unemployment and underemployment. The Agricultural Minimum Wages Act has been on the statute book for over 20 years and everyone acquainted with its operation knows that it cannot be enforced. "...But minimum wages have no meaning unless at the same time employment is guaranteed at the prescribed minimum wage." Therefore, the solution for the unorganized sector is to provide gainful employment opportunities as detailed above.

4. Price Policy. It is an undeniable fact that continuous rise in prices

has eroded large chunks of the income of the masses, and increased profit margins of the producers, and distributors and thus accentuated income inequalities. This necessitates stabilising the price level. Since increases in prices are regarded as inevitable in a developing economy, the *Draft Fifth Plan* suggested: (i) revisions in wages and dearness allowances at periodical intervals in keeping with changing prices of essential consumer goods and also on the basis of recorded productivity growth, and (ii) "pegging the prices of essential commodities at relatively low levels for ensuring supplies of reasonable quantities through a system of public distribution, obviating the need for very frequent changes in dearness allowances and wages." The success of the latter system, in turn, depends on two conditions: first, a reasonable quantity of the required commodity is obtained at prices which are below the open market prices, and the distribution costs of such commodities are kept as low as possible; second, the list of essential commodities should be reasonably small and the commodities must be homogeneous in character. Thus the Plan recommends a system of dual pricing whereby the low income groups are supplied certain essential commodities at low prices through a network of fair price shops so that they are not hit hard by rising prices. In short the Government should so intervene in commodity markets as to influence both the pattern of output and relative prices through taxes and subsidies on domestic production and consumption, tariffs and subsidies on imports and exports, and various terms of quantitative restriction on both domestic production and foreign trade.⁸

5. Social Security. Social security measures, such as free education and health services, cheap housing and supply of essential commodities, etc. tend to improve income distribution. They not only increase the real income of the working classes but also their efficiency.

6. Population Control. One of the important policies relating to income distribution over the long run is to control the growth rate of population. Larger families mean lower per capita income. So to increase per capita income, there is the need to adopt family planning practices on a wide scale. Population can be controlled by the propagation and use of cheap and effective contraceptives and spread of education.

7. Labour-Intensive Techniques. To minimise inequality in the means of production and to provide larger employment opportunities for improving income distribution, the use of labour-intensive techniques is an important instrument of policy. Such techniques should be adopted in the industrial and agricultural sectors of the economy. As aptly

* H.B. Chevrey et al., *op. cit.*, p. 74.

pointed out by Dandekar and Rath, "The only method to distribute....capital in a *capital short economy* is to adopt a technology which would require less capital to employ a worker and hence, with given capital, would employ a large number of workers. It is for this reason that the adoption of a labour-intensive technology is advocated. This certainly can be a method by which the small amount of capital that the economy has may be distributed among a large number of workers."

8. Fiscal Policy. Fiscal policy plays a crucial role in reducing disparities in income and wealth. Personal income and wealth should be so taxed that the taxes may operate on the size distribution of income. Taxes should be progressive which should curb conspicuous consumption and siphon off a major part of unearned incomes into the State exchequer. In particular the burden of indirect taxes should not be more on the lower, middle and poorer sections. Stringent measures should be adopted to unearth black money and tax evasion. The Wanchoo Committee has recommended a number of measures towards this direction, such as implementation of an appropriate urban land policy, including socialisation of urbanizable land, a greater degree of social control on the supply of highly volatile agricultural commodities like raw cotton and oilseeds; effective measures for preventing the smuggling of gold and highly valuable luxury items, etc. Further, as already pointed above, public expenditure should be directed towards those channels which raise the real incomes of the lower, middle and poorer groups of the society, that is, in providing social security.

9. Reducing Concentration. To reduce concentration of economic power, every effort should be made to encourage small industries. Besides, an efficient and dynamic public sector is an important policy measure towards this direction. New entrepreneurs should be encouraged in areas which lack in competitive investment. And by ensuring improvement in productivity through better industrial relations and providing larger incentives to agriculturists, the domestic market should be rapidly developed. The MRTP Act should be implemented earnestly by the Monopolies Commission in order to prevent restrictive price and output policies, and to reduce concentration of economic power in the bands of a few business houses or groups of firms.

10. Backward Areas. Agricultural and industrial development in backward areas is essential for raising the income levels of the people and reduce disparities of income and wealth. Agricultural productivity should be increased by providing new dry farming technology, irrigation facilities, and improved inputs. Fiscal and other concessions should be provided to attract private entrepreneurs for starting new industries. Efforts should be made to locate public undertakings in such areas provided raw material facilities are available. Roads, canals, power and

other basic infrastructure should be established in order to provide gainful employment to the people of the area. Thus with the development of backward areas, agricultural and industrial productivity would increase, employment opportunities would expand, incomes would rise and concentration of economic power in a few hands and region would be reduced.

Thus a variety of instruments ranging from direct attacks on poverty and unemployment and asset inequality to more indirect fiscal and other measures are required to reduce inequalities of income and wealth.

Chapter 72

UNEMPLOYMENT IN INDIA

Unemployment has been one of the most persistent and unmanageable problems facing India. At the same time, one of the objectives of Indian planning has been to remove unemployment and achieve full employment.

Nature of Unemployment in India

The unemployment problem of India is such that more has been written on it than that of any other country in the world, according to A.K. Sen.¹ Still there is no unanimity among the economists over the nature of unemployment in India. Sen distinguishes between the income aspect, the production aspect, and recognition aspect. On the other hand, Raj Krishna discusses four criteria of unemployment: time, income, willingness and productivity.² What Raj Krishna calls "willingness", Sen calls "recognition". We discuss these criteria one by one.

The time criterion refers to the number of hours or days spent in gainful work. A person is "severely underemployed" if he is engaged in gainful work for 28 hours or less in a week, and "moderately unemployed" if he is engaged for more than 28 hours but less than 42 hours in a week.

A person may be employed on some wage or income but the income which he earns may not be sufficient for him to rise above the poverty level. There are many persons in India who work full time in terms of hours per day (time criterion) but earn very little income so that they are still poor. They are hawkers, petty traders, workers in service and repair shops, etc.; in urban areas and casual labourers in rural areas.

A person is considered to be underemployed if he "is forced by unemployment to take a job that he thinks is not adequate for his purpose, or not commensurate with his training." This is the willingness or recognition criterion. Under this criterion, there are also "voluntarily" unemployed persons in urban areas who are searching for specific types of jobs because of their special educational qual-

¹A K. Sen, *Employment Technology and Development*, 1975

²Raj Krishna, "Unemployment in India", *Economic and Political Weekly*, 1979.

or training. They refuse to accept jobs which they feel to be below their status and are dependent on their parents or relatives for financial help during this period of unemployment.

The productivity criterion refers to "disguised unemployment" prevalent among the self-employed and hired labour force in rural India. A person is said to be disguised unemployed if his contribution to output is less than what he can produce by working for normal hours of work per day.³

Sector-wise, unemployment in India is of two types: rural and urban. The majority of the population lives in rural India and is engaged in agriculture and allied activities. Due to a backward agriculture and the seasonal nature of agricultural operations, there is widespread open and disguised unemployment.

On the other hand, urban unemployment is of two types: industrial unemployment and unemployment among the educated. The increase in population, the seasonal nature of agricultural operations, the recurrence of drought or floods and the spread of urbanisation has led to migration of people from rural to urban areas. But the industrial sector has failed to expand along with the growth of labour force thereby increasing industrial unemployment.

With the rapid expansion of educational facilities, the number of educated persons has been on the increase. But the number of persons receiving formal education is much higher than those receiving technical education. So the number of persons seeking clerical jobs far exceeds those seeking technical jobs. As the conditions prevail in the country, it has not been possible to increase employment opportunities for both categories due to structural rigidities. Hence unemployment among the educated has tended to increase with the spread of education.

Extent of Unemployment and Underemployment in India

Due to conceptual and statistical difficulties, the estimates of unemployment and underemployment are neither accurate nor reliable. As the Report of the Committee of Experts on Unemployment Estimates (1970) observed: "It is our view that estimates of growth in the labour force, of additional employment generated in the plans and of unemployment at the end of the Plan period presented in one dimensional magnitude are neither meaningful nor useful indicators of the economic situation."

Despite these handicaps, we give below some estimates of employment and unemployment during the plans. But they just reflect the trend. The estimates of the Planning Commission at the end of each

³For detailed explanation refer to Chapter 2.

Five-Year Plan reveal that the total unemployment at the end of each Plan had been on the increase. At the beginning of the First Plan there were 3.3 million unemployed which increased to 5.3 million at the end of the Plan. The number of the unemployed increased to 7.1 million at the end of the Second Plan, to 9.6 million at the end of the Third Plan, and to 13.6 million at the end of the Fourth Plan. Since these estimates were uni-dimensional, they failed to show the extent of unemployment and underemployment in rural and urban areas. Hence they were discontinued from the beginning of the Fifth Plan.

Thereafter, the Planning Commission has been making estimates of the unemployed on the basis of the usual status which relates to the chronic unemployed in rural and urban areas. The Sixth Plan had estimated a net addition to the labour force of the order of 34 million in the age group of 5-plus during 1980-85. The backlog of usual status unemployment at the beginning of March 1980 was estimated at 12 million. These two together indicated the magnitude of employment to be generated during the Sixth Plan. The estimate of usual status unemployment at the beginning of the Seventh Plan was 40 million.

The estimates of the educated unemployed in India are neither accurate nor reliable because they are based on the figures available with the employment exchanges. There are two principal defects in the data supplied by the employment exchanges. One, not all educated persons get themselves registered with them. Two, many continue to be on the registers of the employment exchanges even when they get jobs because they are in search of better jobs. The number of educated manpower of matriculates and graduates and above was estimated at 47.72 million in 1985.

Causes of Unemployment in India

The widespread unemployment in India has been due to a number of causes which are detailed below:

1. **Poverty.** Poverty and unemployment are the Siamese twins. A person is poor because he is unemployed. He is unemployed because he is poor. Being poor, he does not possess resources to be self-employed. This is illustrated by the incidence of unemployment in terms of monthly per capita expenditure as revealed in the 1973 round of National Sample Survey. Persons in the lowest income group per capita per month had unemployment rates of 32.5 per cent in rural India and 29.2 per cent in urban India. As monthly per capita expenditure increases, the incidence of unemployment declines. For instance, persons in the highest expenditure group and above per capita per month are unemployed at the rate of 1.7 per cent in rural India and 4.9 per cent for rural urban India.

2. Excessive Increase in Population. India has been experiencing a population explosion since 1961. For the decades 1961-71 and 1971-81 population increased at the rate of 2.5 per cent annually. With such a high rate of population growth the labour force has been increasing rapidly over the Plan periods. For instance, the labour force is expected to increase at an annual rate of 2.46 per cent for plus-5 age group, at 2.56 per cent for plus-15 age group and at 2.55 per cent for 15-59 age group between March 1985 and 1990. To absorb this large growing labour force, it has not been possible to generate so many employment opportunities. Consequently, unemployment and underemployment have tended to increase.

3. Slow Growth of Indian Economy. The increase in employment opportunities is intimately related to the growth of an economy. Despite more than three decades of planning, the Indian economy has grown at a compound trend rate of growth of GNP of 3.31 per cent for the period 1961-62 to 1973-74 and of 4.1 per cent for the period 1973-74 to 1983-84. The vast and varied natural resources of the country still remain underdeveloped and unutilized. The transformation of agriculture has been very slow. The development of the industrial sector has been sluggish. As a result, employment opportunities have failed to develop *pari passu* with the increase of labour force.

4. Backward Agriculture. One of the principal causes of widespread unemployment and underemployment in India has been the nature of agriculture operations. About 70 per cent of the population in the country is dependent upon agriculture which has low income per worker and per unit of land. This is because too many are engaged in agriculture, and being poor cannot use improved methods of cultivation. Moreover, agriculture is a seasonal occupation because irrigational facilities are not available throughout the year. Further, there is the absence of alternative or supplementary employment opportunities such as poultry rearing, dairy farming, bee-keeping, fisheries, food processing and other cottage industries due to poverty. Consequently, people in rural areas are chronically and partially unemployed. The green revolution in certain States of India has benefited the rich and large farmers more. The use of tractors by them has reduced the need for farm labour. Dr H.K. Mammohan Singh's field studies in Ludhiana district of Punjab in 1977 reveal that the use of tractors impinged heavily on employment opportunities for human labour.⁴

5. Lack of National Employment Policy. There has been lack of national employment policy in our Five-Year Plans. Except for men-

⁴"Population Pressure and Labour Absorbability in Agriculture and Related Activities Analysis and Suggestions based on Field Studies Conducted in Punjab", E.P.W., 17 March 1979.

tioning a few schemes and projects in the various Plans, no specific policy was laid down to remove unemployment. Rather, the creation of employment opportunities was regarded as a by-product of development in the first three Five-Year Plans. Moreover, there has been the complete absence of any legal provision to implement employment generating schemes. There has also been no serious effort at manpower planning. As a result, in the absence of a clear-cut employment policy, unemployment and underemployment have tended to increase with each Plan.

6. Existence of Excess Capacity in Industries. The majority of industries in India have been operating under excess capacity since 1967. The main reasons for this tendency have been erratic power supply, transport bottlenecks, shortage of raw materials, industrial unrest, etc. As a result, industries are not in a position to work to their full capacity and hence they are not able to absorb enough labour.

7. Emphasis on Capital-Intensive Techniques. Since the beginning of the Second Five-Year Plan, industrial development in the country has been based mainly on the adoption of capital-intensive techniques of production which have failed to generate sufficient employment opportunities. The industrialists in India have been constantly resorting to "rationalisation, modernisation, automation, mechanisation, market manipulation and other labour saving devices and thus the process of replacing of human labour by machines" has been a continuous one. Even the emphasis by the Government has been on the establishment of capital-intensive industries, irrigation projects, road-building equipment, etc., which fail to absorb enough labour force.

8. Government Policy Towards Private Enterprise. The policy of the Government towards the private enterprise is also not conducive to its growth. The private enterprise has to operate under strict Government control and regulation which enforces a rigid licensing policy and heavy Corporation taxes. Moreover, a price-wage spiral, as a consequence of inflationary pressures in the economy, further discourages private enterprise from starting new ventures and expanding the existing ones. All this has failed to create new employment opportunities.

9. Defective Educational System. Unemployment among the educated is due to defective educational system which the country inherited from the Britishers. It imparts general and literary education devoid of any practical content. No effort has been made to develop our educational system in keeping with the manpower requirements of the economy. The adoption of the "open door policy" at the secondary and university levels has created more unemployment among the educated. Such persons are fit only for white-collar jobs which are not available to all. No doubt for some time past the trend has shifted towards

commerce, engineering, medicine and other technical jobs, but due to the lack of a proper manpower planning unemployment is also found among them.

Policy Measures

Keeping in view the causes of unemployment and underemployment the following remedial measures are suggested:

1. **Changing the Pattern of Production.** Employment can be created by changing the pattern of production in India. Emphasis should be laid on the production of those goods which use more labour and less capital investments. In fact, such goods should be manufactured as are needed more by the masses so that they have a ready market.

2. **Adoption of Labour-Intensive Techniques.** Leaving aside such areas as pertain to heavy industries, defence, chemical, power generation, atomic and oil installations, etc., labour-intensive techniques should be adopted in new field of production. It may be what Schumacher termed "intermediate technology," or the adaptation of imported technology to the country's factor endowments so as to absorb more labour. For the creation of such employment-intensive techniques, R and D are needed on a vast scale.

3. **Encouragement to Small Enterprises.** Under the scheme of self-employment, tiny and small industries should be encouraged. For this, they should be provided liberal finance, technical training, raw materials and infrastructural facilities, including marketing of products. A study of Punjab reveals that Rs one lakh of investment in fixed assets provides employment to 15 workers in the small scale sector as against 3 workers in the large scale sector. Therefore, it is better to encourage the establishment of small scale industries which are employment-intensive.

4. **Full Utilization of Excess Capacity.** The Government should endeavour to remove such bottlenecks as power supply, raw materials and transport so that industries which are working below capacity should produce to their full capacity. This would not only increase output but also generate more employment.

5. **Policy of Decentralisation.** The lack of gainful employment in small areas has led to the migration of people to metropolitan areas in search for alternative employment. This has created the problems of urbanisation such as housing, water, transport, etc. It is, therefore, advisable to encourage the setting up of industries in and around small towns preferably relating to the local factor endowment, that is, sugar factories in areas growing sugarcane, cotton ginning, spinning and weaving factories around a cotton growing area, etc. The establishment of agro-based, cattle-based, or forest-based industries depending upon the nature of the local resources available near the rural areas would not

only lead to the development of such areas but also provide larger employment opportunities to the people there.

6. Population Control. The problem of unemployment in India will be hard to solve unless there is population planning and control. The phenomenal rate at which labour force is increasing in the country can be provided gainful employment by any means. It is, therefore, imperative that adequate measures are taken to propagate the need for family planning.

7. Restructuring the Educational System. To solve the problem of the educated employment, India should restructure her educational system. Liberal education should be imparted up to the middle standard, and there should be the vocationalisation of education at the secondary level. College and university education should be restricted only to those who attain a high level of academic achievement. So far as the requirements of engineering, medical, administrative, commercial and other higher levels of technical education are concerned, they should be based on a proper manpower planning of the economy in keeping with the present and future demand for skilled personnel.

8. Measures for Rural Unemployment. The number of underemployed and unemployed is very large in the rural sector. They are primarily landless agricultural workers and marginal farmers. This necessitates the strict enforcement of land reforms so that land should go to the tiller. In addition, the small and marginal farmers should be encouraged to start such subsidiary industries as dairy farming, poultry breeding, bee-keeping, fish culture, etc., so that they may supplement their incomes and also remain partially employed. In areas which are dependent on rains for agricultural operation, such rural works programmes as road-building, canal digging, soil conservation, afforestation, drinking water schemes, buildings for schools, and health centres, etc., should be started during the slack season. Persons employed should be paid partly in kind and partly in cash.

Government Measures

The various development programmes adopted since the beginning of the planning in India have generated sizeable employment opportunities in different sectors. But rural unemployment has become a formidable problem for the planners. Labour force living in rural areas is characterised by widespread underemployment with inadequate work and low incomes. To solve this problem, the Government has started a number of schemes in rural areas.

(1) The National Rural Employment Programme (NREP) envisages generation of employment opportunities of the order of 300-400 million mandays every year. The aim is to provide employment in the

agricultural seasons through productive activities in rural areas. The programme operates in close conjunction with other development works. During the Sixth Plan there was a provision of Rs 1,620 crores for this programme and it generated 1,170 million mandays.

(2) The Rural Landless Employment Guarantee Programme (RLEGDP) was introduced in 1983. The basic objectives of the plan are: (a) to improve and expand employment opportunities for rural landless with a view to providing guarantee of employment to at least one member of every landless labour household up to 100 days in a year; and (b) creation of durable assets for strengthening the rural infrastructure which will lead to rapid growth of the rural economy. Assistance under the programme is provided to the State/UT Governments on 100 per cent grant basis. Funds amounting to Rs 600 crores were allocated to them in the last two years of the Sixth Plan and 260.15 million mandays of employment were generated during these years.

(3) The Integrated Rural Development Programme (IRDP) aims at raising the poorest among the poor above the poverty line by providing productive assets and employment financed by the Government and banks. It was expected to cover 15 million families in all the blocks of the country during the Sixth Plan, and on the average 3,000 families in a block were provided assistance through this programme. A sum of Rs 1,500 crores was provided in the Plan for this programme. The banks were asked to provide another Rs 3,000 crores by way of loans to selected beneficiaries. Further, back-up facilities in infrastructure, community projects and assistance to voluntary agencies are also provided.

(4) The scheme of Training Rural Youth for Self-Employment (TRYSEM) was started in 1979 with the principal objective of removing unemployment among the rural youth. The target is to train about 2 lakh rural youths every year at the rate of 40 youths per block of the country. It aims at equipping the rural youth with skills to enable them to become self-employed. A rural youth from a family having an income of less than Rs 3,500 per year is eligible for selection. Preference in selection is given to those who have aptitude for innovation and entrepreneurial activities. Priority is also given to members of SC/ST and women. The mode of training is through institutions under master trainers. During the Sixth Plan 9.4 lakh rural youths received training under TRYSEM and about 50 per cent of them have taken up self-employment in agriculture, industry and service sectors.

(5) The Food for Work Programme (FWP) aims at creation of additional employment in rural areas on works of durable utility in the form of foodgrains as wages.

(6) The Operation Flood II Dairy Development Project is expected

to benefit 8 million milk producing families while other dairy development schemes would benefit about 5 million additional families.

(7) Fish Farmers' Development Agencies have been designed to help fishermen families in adopting modern techniques and training in fisheries culture.

(8) There are numerous schemes to assist in the development of khadi, village and small industries, including handloom, handicraft, sericulture, etc. These are likely to provide employment to an additional 9 million persons.

(9) Moreover, various components of the Minimum Needs Programme are meant to generate substantial additional employment in infrastructure and social services in rural areas.

(10) Many State Governments are operating special employment programmes in rural areas for unskilled labour on the pattern of the Employment Guarantee Scheme (EGS) of the Maharashtra Government. The scheme provides gainful and productive employment to rural unskilled labour by raising durable community assets, like roads, canals, bunds, and soil conservation schemes. The scheme guarantees right to work at a wage of Rs 6 per day. Similar schemes have been started in Tamil Nadu, Gujarat, Andhra Pradesh, Madhya Pradesh and Karnataka.

(11) Besides, there are irrigation, flood control and C A D programmes which provide large employment opportunities in rural areas, particularly for the weaker sections like the landless labourers. The activities which offer large employment opportunities under irrigation and C.A.D. sectors are: (a) construction of canals where medium and large projects of dam construction are substantially complete, (b) complete on-farm development works, field channels and drainage channels of C.A.D. works; (c) minor irrigation works, and (d) flood control embankment and anti-erosion works to protect river banks.

For the urban educated unemployed, a scheme for Self-Employment to Educated Unemployed Youth has been started through District Industries Centres all over the country excepting towns having a population of over 10 lakhs. It covers matriculates and above in the age group of 18-35 without any access to alternative sources of finance. The scheme which involves giving of a composite loan of Rs 25,000 setting up ventures in industry, service and small business through banks.

Besides, under the National Employment Service (NES) a network of employment exchanges, university employment information and guidance bureaux had been set up throughout the country. They assist all types of employment seekers and also carry out other functions, such as vocational guidance and employment counselling for better utilization.

of human resources, the collection and dissemination of employment and occupational research. Moreover, it is obligatory for all establishments in the public sector and non-agricultural establishments in the private sector employing 25 or more workers to notify their vacancies with certain exemptions to the employment exchanges and supply periodic information. Further, a weekly journal *Employment News* is being published in English and Hindi which publishes information about all types of jobs being notified by private, semi-government and Government organisations.

To conclude with Professor M.L. Dantwala an employment strategy in India should have three basic ingredients: (1) a policy to maintain the highest possible growth rate for the economy; (2) a policy having a more labour-intensive pattern of production; and (3) a policy to regulate the technological change so that the growth rate of employment is maintained at a satisfactory level.

OUTPUT VERSUS EMPLOYMENT

The literature on economic development in the 1950s and 1960s emphasised the expansion of the modern industrial sector as a precondition for the rapid economic development of a developing economy. It was argued that the development of the industrial sector not only produces for the domestic market but also for the foreign market by following the policy of import substitution. Further, the expansion of this sector also absorbs surplus labour that migrates to urban areas in search of jobs. This is because with the expansion of industrial sector agriculture recedes into the background and thus releases labour for the urban sector.

But this reasoning is misconceived because it is based on the experience of industrialised countries. In the latter, there has been a tendency to equate total economic growth with industrial expansion. On the other hand, in developing countries the problem is one of providing larger employment opportunities in rural areas where the majority of labour force is concentrated. Expansion of the modern industrial sector with the main objective of maximising output cannot solve the problem of urban unemployment. In many developing countries, the growth of industrial output has been more than the growth of employment in the industrial sector. For example, the contribution of Gross Domestic Product (GDP) in the industrial sector in India was 20 per cent in 1960 and 27 per cent in 1984. But the percentage of labour force engaged in this sector was 11 and 13 respectively. In Brazil, the contribution of the industrial sector to GDP was 20 per cent in 1960 and 1984 respectively, while the percentage of labour force employed in this sector was 15 and 27 respectively.

Even the pace of industrialization has been much slower than that of urbanisation in such countries. Consequently, the percentage of total population living in cities far exceeds the percentage employed in the industrial sector. For example, 18 per cent of the total population in 1960 and 25 per cent in 1984 in India was living in urban areas, while the total labour force employed in industry was 11 per cent and 13 per cent for the two years. Similarly in Brazil, 46 per cent of the total population in 1960 and 72 per cent in 1984 was living in urban areas. Of this, 15 per cent and 27 per cent respectively were employed in industry for the two years. Thus there is a conflict between the objectives of maximisation of output and maximisation of employment in developing countries.

So far as a developed country is concerned there is no conflict between the two objectives. It is theoretically argued that given a technique of a particular capital intensity the growth rate of output and employment will be the same. But technical changes take place over time which tend to increase labour productivity. The increase in productivity may be due to education and improved training and better management techniques. Or, it may be due to the use of capital-intensive techniques. If labour productivity increases fewer workers are needed to produce the same level of output. Hence the growth rate of employment will be less than the growth rate of output. But the experience of developed countries suggests that generally there is positive relation between the growth of output employment and labour productivity. The use of more capital-intensive techniques of production results in more output, large profits, higher savings and to higher growth rate of employment in the future. Thus the growth of output will be higher than the growth of employment.

The apparent conflict between output and employment in developing countries arises from the fact that such economies have been using capital-intensive techniques in all sectors. But they have not been able to maximise either output or employment. The use of imported, expensive and inappropriate capital-intensive machines and equipment cannot be put to their full capacity in such countries due to the lack of adequate technical personnel and infrastructural facilities like power, transport, raw materials, etc. Further, the small size of the local market stands in the way of full capacity use of such techniques of production. Even though the use of such technology increases labour productivity somewhat, yet it reduces total factor productivity due to the non-availability of other factors of production. The latter, in turn, raises the average costs of production. As a result, output cannot be maximised. On the other hand, such capital-intensive techniques fail to create new employment opportunities.

So the current trend in developing countries is to sacrifice the objective of output to employment, and to evolve a development strategy which is employment-oriented and aims at more equitable redistribution of income. The usual arguments advanced for preferring employment to output are the following:

When employment increases, income also rises in the economy. Increased incomes of the masses create more demand for the basic consumer goods produced locally. Since such goods are labour-intensive, they tend to create more employment opportunities and lead to increased incomes. This process becomes self-reinforcing which ultimately raises the levels of output and employment within the economy.

The creation of job opportunities is a better method for redistribution of income than the use of final and social security measures like taxation, unemployment, relief, etc. More jobs mean a widespread distribution of income in the community.

Of all the evils of a modern society, unemployment is the worst. It demoralises the people who lose self-respect. Breeds contempt for the society. Compels the unemployed to resort to evil practices like dacoity, robbery, murders, pick-pocketing, etc. Mass unemployment may even endanger political stability. It is, therefore, wiser to sacrifice output levels to employment.

The creation of employment opportunities is related to the location of work in a developing economy. The majority of the unemployed reside in rural areas who should be provided employment there. For this, employment-intensive projects like road construction, water supply, irrigation, rural schools, housing and community health centres, dairying, forestry and fisheries are required to be started. Even for other agro-based industries like sugar and textiles, labour-intensive methods should be used.

But the problem of urban unemployment is one of long-run which cannot be tackled successfully unless the flow of migrants from rural areas is checked. Of course, this is a difficult proposition. Therefore, the solution of urban unemployment requires the creation of employment opportunities at a high rate, not only in the present but also in the future. This involves the use of both capital-intensive and labour-intensive techniques whereby the conflict between output and employment has to be reconciled in the long run.

Chapter 73

NATIONAL INCOME OF INDIA

MEANING

National income is used interchangeably with national dividend, national output, and national expenditure. On this basis, national income has been defined in a number of ways. In common parlance, national income means the total value of goods and services produced annually in a country. In other words, national income is the total amount of income accruing to a country from economic activities in a year's time. It includes payments made to all resources in the form of wages, interest, rent, and profits. Simon Kuznets defines national income as "the net output of commodities and services flowing during the year from the country's productive system in the hands of ultimate consumer." A United Nations report defines national income on the basis of the systems of estimating national income: as net national product, as addition to the shares of different factors, and as net national expenditure in a country in a year's time. In practice, while estimating national income, any of these definitions may be adopted because the same national income would be derived.¹

METHODS OF MEASURING NATIONAL INCOME IN INDIA

Dr V.K.R.V. Rao was the first Indian economist who computed the national income of India in a scientific manner. He combined the product method with the income method to arrive at India's national income for 1931-32. For this purpose, he divided the economy into three sectors. In the first sector, he included agriculture and allied activities like forests, mines, fisheries, hunting and pastures. He applied the product method to calculate the income of this sector. He included industry, transport, trade, domestic services, professions, and public services in the second sector. The third sector included property and other items which could not be included in the other two sectors. Rao calculated the income of the second and third sectors by applying the

¹For the determination of national income, refer to my *Macroeconomic Theory*, Chapter 15, and for concepts and measurement of national income, Chapter 2.

income method. He estimated the output of agriculture and allied activities at current prices and added it to the income from the other two sectors. To these was added net income from abroad in order to arrive at the national income estimates. Thus Rao used a mixed method for computing India's national income.

The first systematic official estimates of national income began to be made with the appointment of the National Income Committee in August 1949 consisting of Professors Mahalanobis, D.R. Gadgil and V.K.R.V. Rao. The Committee submitted its report in April 1951 and the final report in February 1954. In the first report, it gave estimates of national income for the year 1948-49 along with the breakdowns of the estimated income. The total national income was analysed by industrial origin, the character of the enterprise, and the net output per engaged person in various occupations. The final report contained estimates of national income for the years 1948-49, 1949-50 and 1950-51 both at current and constant prices.

After the release of these two reports, the national income estimates of India have been prepared and published regularly by the Central Statistical Organisation (CSO). This organisation estimated India's national income till 1964-65 at both constant (1948-49) and current prices by using the concepts, statistical material and methodology as employed by the National Income Committee. These estimates came to be known as the conventional series.

The estimates of national income for the period 1948-49 through 1964-65 were obtained by combining the product and income methods. The product method was used to estimate the gross output from agriculture, animal husbandry, fisheries, forests, mining, and factories. From the gross value of output was deducted the value of raw materials used, service inputs and depreciation of assets in order to arrive at the net value of output. The income method was used to estimate the income of small enterprises, trade, transport, domestic services, professions, house property and public services. This was calculated by multiplying the average net earnings per person by the total number of persons engaged in the respective sectors.

Keeping in view the importance of national income estimates for purposes of planning, CSO introduced many methodological changes in the estimation of national income. Accordingly, it prepared "revised series" of national income at 1960-61 prices and current prices for the period 1960-61 to 1964-65 in 1967 which were subsequently carried backward to 1950-51 and forward to 1975-76. These estimates were further revised in 1976-77 at current prices and 1970-71 (constant) prices. Now these estimates computed by the CSO at both current and constant (1970-71) prices are made available from 1950-51 onwards for

every year.

In preparing these estimates, the CSO follows the product and income methods. The product method is used in the commodity producing sectors like agriculture, forestry, fishing, mining, etc., and manufacturing. In order to estimate the net output of these sectors, the value added approach is used. This approach has already been explained above. The income method is employed for computing income from tertiary or service sector such as banking, transport, trade, public services, etc. The procedure for calculation is to multiply per person average earnings by the number of people working in a profession. To the combined estimates so arrived at by using the product and income methods are added the estimates of net income from abroad. This gives the estimates of net national income or product. To arrive at the gross national product or income, depreciated value of assets is added to the net national product.

DIFFICULTIES OF MEASURING NATIONAL INCOME IN INDIA

No doubt India has made much progress in estimating the country's national income, yet national income data are incomplete and unreliable because of certain limitations. They are discussed below:

(a) There is a substantial non-monetized sector in India which makes the calculation of national income difficult. A great deal of what is produced in the subsistence sector is either exchanged for other goods or is kept for personal consumption. This tends to underestimate the national income.

(b) There is the lack of occupational specialization in the country which makes the calculation of national income by distributive shares or by industrial origin difficult. Besides the crop, farmers often produce a variety of products like eggs, milk, articles of clothing, etc. that are never included in the national income estimates.

(c) In India people are mostly illiterate and do not keep any accounts, and even if they do, they are reluctant to disclose their correct income. In such a situation only rough estimates are possible.

(d) National income estimates include only those goods and services which are commercially used. But in India people living in rural areas and manufacturing articles of consumption from rudimentary goods are able to avoid many expenses. They build their own huts, garments and other necessities. Thus relatively fewer goods are channelised through the market, and therefore are not included in the national income estimates.

(e) The computation of national income in terms of ~~re~~ underestimates the real income. It does not include the re

producing an article, the effort or sacrifice of leisure foregone in the process of production. The income earned by two persons may be the same, but if one works for longer hours than the other, there is some justification in saying that the real income of the former is underestimated. Thus the national income does not take into account the actual cost of production of a commodity.

(f) In calculating national income, good number of public services are also taken which cannot be estimated correctly. How should the police and military services be estimated? In the days of war, the forces are active, but during peace they rest in cantonments. Similarly, to estimate the contribution made to national income by profits earned on irrigation and power projects in terms of money is also a difficult problem.

(g) Again, as the National Income Committee Report pointed out, "The reduction of the numerous economic activities of the millions of people in a country to common denominator that permits quantitative measurements is clearly beset with intellectual difficulties. How does one add together the services of a street sweeper with those of the Prime Minister, the product of a village carpenter with that of a steel mill?"

(h) National Income is always measured in money, but there are a number of goods and services which are difficult to be assessed in terms of money, e.g., painting as a hobby by an individual, the bringing up of children by the mother. Similarly, when the owner of a firm gets married to his lady secretary, her services, though a part of national income, are not included in it. By excluding all such services from it, the national income will work out to be less than what it actually is.

(i) Income earned through illegal activities such as gambling, or illicit extraction of wine, etc. is not included in national income. Such goods and services do have value and meet the needs of consumers. But by leaving them out, the national income works out to less than the actual.

(j) Another difficulty in calculating national income is that of price changes which fail to keep stable the measuring rod of money for national income. When the price level in the country rises, the national income also shows an increase even though the production might have fallen. On the contrary, with a fall in the price level, the national income shows a decline even though the production might have gone up. Thus due to price changes the national income cannot be adequately measured. To solve this difficulty, statisticians have introduced the concept of real national income, according to which the prices of the year in question are assessed in terms of prices of the base year. But this does not solve the problem of calculating the national income, because a number of new products which the country produces now are not included in the base year. Since development is a continuous process and new products are fast coming up in the country, the estimation of

national income even at constant prices does not give accurate figures.

(k) But the greatest difficulty in the accurate estimation of national income in India has been the non-availability of adequate data pertaining to such activities as crop production, fisheries, forestry, animal husbandry, small enterprises, petty shopkeepers, construction sectors, etc. Besides production data, cost data are also not available in the case of such activities which make the estimation of national income by value added difficult.

For estimating the national income by the income method, correct and adequate data on earnings and on the number of persons employed in the tertiary sector are not available. The main sources for the number of persons employed in the service sector are the census figures and NSS rounds. But the figures of censuses and NSS rounds are unsatisfactory because they are based on different concepts and definitions. In certain cases, income tax statistics are taken for calculating earnings which are also not reliable because people avoid a major part of their incomes from the tax-net.

Further, accurate and complete information on earnings from real estate and house property in the form of rent and interest earned by persons is not available which understates the national income.

Moreover, up-to-date and comprehensive data on consumption expenditure, saving and investment of the rural and urban population are not yet available to estimate the national income by the expenditure method in India. Neither is there any machinery for their collection in this vast country.

IMPORTANCE OF NATIONAL INCOME ANALYSIS IN INDIA

National income data are of great importance for India's economy. These days the national income data are regarded as accounts of the economy, which are known as social accounts. These refer to net national income and net national expenditure, which ultimately equal each other. Social accounts tell us how the aggregates of a nation's income, output and product result from the income of different individuals, products of industries and transactions of international trade. Their main constituents are interrelated and each particular account can be used to verify the correctness of any other account. Based very much on social accounts, the national income data assume much importance.

National income data form the basis of national policies ~~and~~ employment policy, because these figures enable us to ~~and~~ direction in which industrial output, investment, saving, ~~and~~

Thus proper measures can be adopted to bring the economy to the right path.

In the process of planning, the national income data are of great importance. For economic planning, it is essential that data pertaining to the country's gross income, output, saving, consumption and investment from different sources should be available. Without these, it is difficult to plan for the future. National income data are also used by economists to build planning modes of the economy.

The national income data are also made use of by the research scholars of the country. They make use of the various data of the country's input, output, income, saving, consumption, investment, employment, etc., which are obtained from social accounts.

National income data are significant for a country's per capita income which reflects the economic welfare of the country. The higher the per capita income, the higher the economic welfare, and vice versa.

National income statistics enable us to know about the distribution of income in India. From the data pertaining to wages, rent, interest, and profit we learn about the disparities in incomes of different sections of the society. Similarly, the regional distribution of income is revealed by these data. It is only on the basis of these that the government can adopt measures to remove the inequalities in income distribution and to restore regional equilibrium. With a view to removing these personal and regional disequilibria, decisions to levy more taxes and increase public expenditure also rest on national income statistics.

Further, as pointed out by the National Income Committee, "National income statistics provide a wide view of the country's entire economy, as well as of the various groups in the population who participate as producers and income receivers and that, if available over a substantial period, they reveal clearly the basic changes in the country's economy in the past and suggest, if not fully reveal, trends for the future."

Last but not the least, national income estimates help in comparing the level of progress of different countries. From a study of the national income figures of countries, it can be known which countries are developed and which the backward. For national income statistics reflect the growth rate of the country and the standard of living of the people.

INDIA'S NATIONAL INCOME DURING THE PLANNING PERIOD

The estimates of India's national income both at current and constant prices are available in three series. The first are conventional series based on 1948-49 prices. The second are revised series based on 1960-61

prices. The third are new series based on 1970-71 prices. It is, therefore, better to analyse the trends of India's national income during different Plans in terms of the New Series.

The table reveals that during the First Plan, 1950-51 to 1955-56, national income at current prices rose by about 5 per cent but it rose by 19.3 per cent at constant prices (1970-71 = 100). This large difference is due to two factors: one, prices did not rise much during 1950-51 to 1955-56, in 1970-71 prices were much higher. Hence the computation of national income at 1970-71 prices shows inflated estimates.

But the estimates of national income at current prices from 1955-56 onwards show that India's national income increased at a tremendous rate. This is reflected not only by the absolute figures but also by the index number of national income at current prices. These reveal that prices have been continuously rising since the beginning of the Second Plan. It is, therefore, advisable to analyse the trends in national income at constant prices, because they reflect changes in real income over the years and eliminate the effect of changes in prices.

Over the Second Plan, national income at constant prices rose by 21.5 per cent. But during 1960-61 to 1965-66 and 1965-66 to 1968-69, national income increased slowly by 11.8 per cent and 12.6 per cent respectively. This was due to unprecedented drought conditions and fall in agricultural and industrial production. But conditions improved during 1968-69 to 1974-75 and 1974-75 to 1978-79 when national income rose by 19.6 per cent and 27.1 per cent respectively over these Plan periods.

After two years of reasonable economic growth, the year 1979-80 witnessed a decline of 5.5 per cent in real national income. This was because "severe drought gripped large parts of the country and rainfall was erratic in other parts with the result that agricultural production declined by 10 per cent in sharp contrast to the record harvest in 1978-79. Industrial production declined marginally, again in contrast to the increase of 7.6 per cent in 1978-79. Owing to the poor performance of power, coal and rail transport the infrastructure emerged as a severe bottleneck on production."²

During the first year (1980-81) of the Sixth Plan the economy recovered and the national income at constant prices increased by 7.4 per cent over the previous year. This was due largely to the ambitious investment programmes of Sixth Plan. In 1981-82, almost all the sectors picked up the growth rate stipulated in the Plan and the national income went up by 5.3 per cent. The year 1982-83, however, proved to be a very bad year for agriculture with severe drought, flood and cyclones in different parts of the country. The industrial production also fell to 3.9 per cent. Consequently, the growth rate decelerated to 2.4 per cent in

²G.O.t., Economic Survey, 1979-80

1982-83. In 1983-84, the growth rate of NNP was 8.1 per cent due to a good performance of the economy. It dropped to 3.5 per cent in 1984-85.

But the above estimates of national income do not reflect the true picture of the performance of the Indian economy. This is because the annual growth rates of national income even at constant prices (1970-71 = 100) have been varying considerably over the Plan periods and have occasionally exceeded the targeted growth rates. This is revealed by Table 73.1 which shows that except for the First Plan, Second Plan, and the Fifth Plan, annual growth rates of national income at constant prices did not reach the targeted growth rates. Even the achieved growth rates did not touch the 5 per cent level except for the

TABLE 73.1. ANNUAL GROWTH RATES OF NET NATIONAL INCOME

Plan/Year	Targeted	Actual at constant Prices (1970-71)
First Plan Period	2.1	3.6
Second Plan Period	2.5	4.0
Third Plan Period	5.6	2.5
Three Annual Plans Period	5.2	4.1
Fourth Plan Period	5.7	3.5
Fifth Plan Period	4.4	5.2
Sixth Plan Period	5.2	5.4

Fifth and Sixth Plan. This shows that the growth of national income in India had been using unsatisfactory, being 4 per cent on the average for the six plans.

If we compare India's growth rate of national income with other low income countries, we find that India does not compare favourably with even such countries as Burma, Sri Lanka, China, Pakistan and Bangladesh as shown in Table 73.2.

TABLE 73.2 AVERAGE ANNUAL GROWTH RATE OF GDP

Country	1965-73	1973-84
India	3.9	4.1
Bangladesh	—	5.0
Burma	2.9	6.0
Sri Lanka	4.2	5.2
China	7.8	6.6
Pakistan	5.4	5.6

Source: *World Development Report, 1986.*

The table reveals that during the two periods 1965-73 and 1973-84, India's real GDP had been almost stationary at 4 per cent on the average. Moreover, it was lower than the majority of low income countries listed above.

Tables 73.1 and 73.2 further reveal that India's national income is not only low but has also been fluctuating considerably, sometimes rising and at other times declining. The main reason has been our dependence on agriculture which is still in a state of uncertainty. Whenever there is a set-back in agriculture due to an unfavourable weather, there is a simultaneous set-back in industry. There have been acute shortages of power and materials, poor industrial relations, and transport bottlenecks which have been responsible for the existence of idle capacity in industries and the subsequent consequences in the form of inflation and erosion of public resources. "An unstable growth rate affects the average level of performance not just arithmetically but also through the effects of instability on the distribution of income, price expectations, the motivation to invest, innovate and take risks and on the volume of public savings." A study conducted by the Birla Institute of Scientific Research³ points out that one of the major constraints resulting in a low NNP is the poor technological growth rate in the Indian economy. The technologies failed to keep up with the increasing rate of investment in the successive five-year plans resulting in steep rise in the capital-output ratio, thereby making investment uneconomic. The rate of technological growth during 1951-80 had been between 0.7 to 1.1 per cent whereas in other countries a growth rate of 3 per cent is maintained, as in Japan. Referring to the technological growth in the three vital sectors—agriculture, industry, and services—the study points out that in agriculture it had been far below the warranted growth rate of 2.9 per cent. In the industrial sector, the rate of growth of technologies fell from 1.6 per cent in the 1950s to 1.1 per cent in the 1970s, whereas it should be 2.3 per cent. In the case of railways, the growth rate has been 1.9 per cent, and in electricity it has been 1.3 per cent. There has been no technological progress in mining and quarrying. However, in the case of services, especially hotel and restaurants, the growth rate of technologies has been 5.4 per cent.⁴ The overall impact of these factors has tended to keep the national income of the country at a low level.

NATIONAL INCOME BY SECTORAL DISTRIBUTION

National income is the total of contributions of the various production

³The Economic Times, 14 January 1985.

⁴For a detailed study of the causes of low national income, read the last section of the next chapter.

sectors of the economy, such as the primary, secondary and tertiary.⁵ The sum of net value added of these sectors gives the total net national income. This is known as national income by sectoral distribution or by industrial origin. The amount contributed by different sectors is different, depending upon the level of economic development of the country. In an underdeveloped country like India, the contribution of the primary sector to national income is very large, and that of the other

TABLE 73.3 NATIONAL INCOME BY SECTORAL DISTRIBUTION AT 1970-71 PRICES IN PERCENTAGES

<i>Sector/Industry</i>	1970-71	1974-75	1978-79	1984-85
1. Agriculture, forestry and logging, fishing, mining and quarrying	50.6	46.6	44.2	38.2
2. Manufacturing construction, electricity, gas and water supply	19.8	20.6	21.8	21.6
3. Transport, communications and trade	15.9	17.3	18.0	19.7
4. Banking and insurance, real estate and ownership of dwellings and business services	4.9	5.1	5.7	7.0
5. Public administration and defence and other services	9.6	10.7	10.4	13.4
6. Gross Domestic Product at factor cost	100.8	100.3	100.1	99.9
7. Net Factor Income from abroad	(-)0.8	(-)0.3	(-)0.3	+0.1
8. Gross National Product	100.0	100.0	100.0	100.0

Source: Central Statistical Organisation.

sectors is comparatively low. But in a developed country, the contribution of the secondary and tertiary sectors is large and that of the primary sector is very low. As the economy develops, there is shift away from the primary to secondary activities and from secondary to tertiary activities. Thus the contribution of the primary sector to national income gradually declines and of the secondary and tertiary sectors increases with economic development.

India's national income by sectoral distribution is divided into six major groups. They are: (1) Agriculture, forestry and logging, fishing,

⁵Primary sector includes agriculture and allied activities; secondary sector includes industries and manufacturing; and tertiary sector includes transport, banking, trade and other services.

mining and quarrying. (2) Manufacturing, construction, electricity, gas and water supply. (3) Transport, communications and trade. (4) Banking and insurance, real estate and ownership of dwellings and business services. (5) Public administration and defence and other services. (6) Net factor income from abroad. The sum of income originating from groups (1) to (5) is the gross domestic product or income. When net factor income from abroad (group 6) is added to the gross domestic income, we get gross national income. Sectors in group (1), refer to the primary sector, in group (2) the secondary sector, and in groups (3), (4) and (5) combined relate to the tertiary sector. The contribution of different sectors to India's national income at constant prices ($1970-71 = 100$) is shown in Table 73.3 which reveals that:

1. The contribution of agriculture, forests, fishing, mining has been gradually declining over the years. The contribution of these activities in 1950-51 (at 1970-71 prices) was 61.5 per cent which declined to 56.7 per cent in 1960-61, to 50.6 per cent in 1970-71, to 46.6 per cent by the end of the Fourth Plan (1974-75), to 44.2 per cent by the end of the Fifth Plan (1978-79), and to 38.2 per cent in 1984-85, the end of the Sixth Plan. The decline in the contribution of the primary sector to India's national income from the beginning of the First Plan to the end of the Sixth Plan by 23.3 percentage points is a definite sign of India's march towards economic progress.

2. The contribution of manufacturing, construction, electricity, gas and water supply to India's national income has been gradually increasing. In 1950-51, it was 14.5 per cent at constant prices ($1970-71 = 100$). It rose to 17 per cent in 1960-61, to 19.8 per cent in 1970-71, 20.6 per cent at the end of the Fourth Plan to 21.8 per cent at the end of the Fifth Plan, and to 21.6 per cent in 1984-85. However, the increase in the contribution of the secondary sector to India's national income has been very slow since 1970-71. The main reasons for this trend have been erratic power generation, shortages of materials, and bad industrial relations leading to the presence of excess capacity in manufacturing, construction and other industries.

3: The contribution of transport, communications and trade has also been increasing continuously. It rose from 10.6 per cent in 1950-51 to 13.5 per cent in 1960-61, to 15.9 per cent in 1970-71, to 17.3 per cent in 1974-75, and to 18.9 per cent in 1979-80. But the contribution of this sector to India's national income was around 17 per cent between 1972-73 to 1977-78. Even during 1978-79 to 1984-85, its contribution increased only from 18 to 19.7 per cent. This was primarily because the performance of railways had been unsatisfactory. Net tonne kilometre of traffic remained more or less stationary due to an offsetting increase in the average distance of traffic. The present network of the rail-

system has reached a plateau. There has been virtually no replacement of aged rolling stock and track renewals. Further, this sector failed to generate more income because of the shortage of diesel and rising prices of petroleum products needed for road transport.

4. *The contribution of banking and insurance* to India's national income has been increasing over the planning period. It rose from 0.9 per cent in 1950-51 to 1.3 per cent in 1960-61, to 4.9 per cent in 1970-71, to 5.7 per cent in 1978-79 and increased to 7 per cent in 1984-85. This sector has been generating more income after the nationalisation of 14 banks in 1969.

5. *The contribution of public administration, defence and other services* to India's national income was 8 per cent in 1950-51 which rose to 9 per cent in 1960-61 and then marginally to 9.5 per cent in 1970-71. After that it varied around 10 per cent from 1972-73 to 1978-79, and then rose to 11.9 per cent in 1979-80, and 13.5 per cent in 1984-85. The principal reasons for these stationary trends first for the period 1950-51 to 1959-60, then for the decade 1960-61 to 1970-71, and finally for the period 1971-75 to 1978-79 had been the increase in D.A., and revision of grades of Government employees with the rise in the cost of living index, and increase in defence expenditure.

The above analysis of national income by sectoral distribution (or industrial origin) reveals that agriculture and allied activities still occupy a predominant position in the structure of India's national income. But the contribution of this sector to national income has been declining. On the other hand, the contribution of the secondary sector to India's national income has remained low. It has failed to rise above 22 per cent. Its growth has been very low for the reasons already noted above. For a real transformation of the Indian economy, the contribution of this sector must increase at a rapid pace. But it is a matter of satisfaction that the contribution of the tertiary sector (items 3, 4 plus 5) has increased to 40 per cent during more than thirty years of planning. This pattern of structural change in Indian economy has deviated from the development pattern of western economies. These economies experienced first a shift from primary to secondary sector and only in their advanced stage did they experience a significant shift in favour of tertiary sector. This pattern of development enabled them to transfer growing labour force from primary to secondary sector. In India this has not been possible because the secondary sector has not expanded fast enough to absorb the growing rural labour force. The fast expanding tertiary sector has been able to absorb skilled and trained labour force. The unskilled and uneducated rural masses have continued to struggle

in the primary sector and those who have been forced out by economic, social and political factors have joined the urban slum sector.⁶

Chapter 74

SAVING, INVESTMENT AND GROWTH RATES

In the economic plans of India, the saving and investment rates are taken as percentage of national income, and the overall growth rate of the economy is estimated as average percentage per year during the plan period. We analyse the trends of saving, investment capital formation and growth rates in this chapter.

SAVINGS

Much importance has been given to savings in India, plans for economic development. This is because the rate of investment cannot be increased without increasing the rate of saving. Savings are an important source for meeting the financial resources of plans. In order to meet the financial resources of a plan, savings are mobilised from the following sources:

1. Public savings which include budgetary savings and savings from public enterprises.
2. Private corporate savings.
3. Savings of non-credit cooperative societies.
4. Savings of financial institutions which include Reserve Bank of India, scheduled banks, Government financial institutions, non-Government financial institutions, credit cooperative societies.
5. Domestic savings include net financial assets. They are (a) increase in money, increase in deposits which include increase in the deposits of

TABLE 74.1. DOMESTIC SAVING AND INVESTMENT (AT MARKET PRICES)

Year	Saving as per cent of GDP	Investment as per cent of GDP	Plan Period ending
1950-51	10.2	10.0	—
1955-56	13.9	14.3	First
1960-61	13.7	16.9	Second
1965-66	15.7	18.2	Third
1968-69	14.1	15.4	3-Annual
1973-74	15.0	23.0	Fourth
1978-79	24.7	24.8	Fifth
1984-85	22.9	24.4	Sixth

scheduled banks, cooperative societies, non-banking companies, term-lending institutions, and of private corporate financial institutions; (b) increase in the funds of LIC; (c) provident funds which include Central and State Governments' provident funds, employees' provident funds, and other provident funds; (d) corporate and cooperative shares and debentures along with units; (e) small savings, loans, deposits and miscellaneous Government liabilities; (f) net financial assets (after deducting financial liabilities) and physical or real assets.

Statistics about national income, saving and investment in India are incomplete and unsatisfactory. Different data relating to national income, saving and investment are presented for the same year by the NCEAR, the Reserve Bank of India and the CSO. The reason is that these institutions use different concepts and methods for estimating these data. Table 74.1 shows data relating to saving and investment for the different plan periods as calculated by the CSO.

During the First Plan savings increased from 10.9 per cent in 1950-51 to 13.9 per cent in 1955-56, but fell marginally to 13.7 per cent at the end of the Second Plan. Savings to 15.7 per cent by the end of Third Plan (1965-66) they declined to 14.1 per cent in 1968-69. The main causes of the decline in savings during these years were droughts and the existence of unutilised capacity in industries. During the Fourth Plan, the increase was 15 per cent in 1973-74 and by the end of the Fifth Plan the actual growth was 24.7 per cent in 1978-79. The saving rate was 22.9 per cent by March 1985.

For data relating to savings by sources, we are dependent upon the estimates given by the Reserve Bank of India which are different from the figures given in Table 74.1

TABLE 74.2 NET SAVINGS BY SOURCE AS PERCENTAGE OF NNP

Year	Public	Corporate	Household	Plan
1955-56	1.2	0.5	4.9	First
1960-61	1.6	0.5	6.5	Second
1965-66	3.2	0.4	7.2	Third
1968-69	2.0	0.2	6.7	Fourth
1973-74	1.7	0.3	8.0	Fourth
1978-79	3.2	0.7	12.9	Fifth
1984-85*	7.5	2.0	15.0	Sixth

Estimated as percentage of GNP.

Table 74.2 reveals that the majority of savings in India are being made by the householder sector. Government institutions also make

contribution to the national savings while the contribution of the corporate sector has been negligible. Household savings continued to rise during the first three five-year Plans. They rose from 4.9 per cent to 6.5 per cent and to 7.2 per cent respectively. Similarly, Government savings increased from 1.2 per cent to 1.6 per cent and to 3.2 per cent over the three five-year Plans. But savings of the three sectors declined during the three Annual Plans due to droughts and declined in industrial production. Household savings increased from 6.7 per cent in 1968-69 to 8 per cent by the end of the Fifth Plan (1973-74), but Government savings declined from 2 per cent to 1.7 per cent over the same period. The main reason for this decline was the fall in the profits of public undertakings. The estimates of the Planning Commission for the Fifth Plan reveal that Government, corporate, and household savings increased considerably. They were 3.2 per cent, 0.7 per cent and 12.9 per cent respectively in 1978-79. By the end of the Sixth Plan (1984-85) household savings were estimated to rise to 15 per cent while of the Government and corporate sectors were expected to increase to 7.5 per cent and 2 per cent respectively.

This analysis of savings by source reveals that the majority of savings are made by the household sector which are 75 to 84 per cent of the total savings. These come from small savings and upper income families. The contribution of the non-Government corporate sector has been very low which points towards the low growth rate of industrial production.

It is to be noted that the continuous increase in household savings, despite persistent inflationary pressures and steadily rising tax-income ratio, are the result of the spread of institutional infrastructure. The main supply line of household savings is the urban sector while there are few prosperous families in the rural sector in certain regions of each State. The emphasis on redistributive measures is likely to lower the saving ratio in the future because the low income groups would consume more when their incomes increase with redistribution of income and the upper income groups would not reduce their consumption even when their incomes decline as a result of increase in tax rates. Even moving on the presumption that households would spend a lesser proportion of their disposable income on consumption, the Sixth Plan envisages a decline in the share of the household sector in total savings from 75.2 per cent in 1979-80 to 66.9 per cent in 1984-85. But increase in household income over the Plan period will lead to more consumption. Therefore, household savings will decline otherwise on account of inflationary pressures and increase in tax rates. The savings incentives provided in the Central budgets for 1981-82 and 1982-83 to income-tax payers are not likely to increase savings much because a small percentage of the total population comes under the income-tax net.

INVESTMENT (GROSS DOMESTIC CAPITAL FORMATION)

The rate of investment in the Indian economy has been continuously rising over the Plan periods, as is apparent from Table 74.1. Investment as a percentage of GDP increased from 10 per cent in 1950-51 to 14.3 per cent 1955-56. It rose to 16.9 per cent by the end of the Second Plan and to 18.2 per cent by the end of the Third Plan. It declined in 1968-69 to 15.4 per cent and rose to 23 per cent in 1973-74 and further to 24.8 per cent in 1978-79. It was 24.4 per cent by the end of the Sixth Plan (1984-85).

Table 74.1 further reveals that the investment rate has been higher than the savings rate. The gap between saving-investment rates is being covered by foreign assistance, foreign exchange reserves and deficit financing.

GROWTH RATES

The targets of growth rates of the economy fixed for the various plans in India have not been achieved except for the First, Second and Fifth Five-Year-Plans. In the First plan, the growth rate of 3.6 per cent per annum was achieved which was higher than the estimated growth rate of 2.1 per cent. During the Second Plan also, the actual growth rate was higher than the targeted growth rate. It was 4 per cent against 2.5 per cent. In the Third Plan the actual growth rate was much lower than the targeted, the former was 2.2 per cent against 5.6 per cent. Similarly, the three Annual Plans (1966-67 to 1978-79) achieved an average growth rate of 4 per cent against the targeted growth rate of 5.2 per cent. The Fourth Plan showed a much larger decline in the actual growth rate as compared to the estimated growth rate, the former was 3.4 per cent against the latter rate of 5.7 per cent. But the Fifth and Sixth Plan achieved a higher growth rate of 5.2 per cent and 5.4 per cent per annum respectively. Between 1950-51 and 1984-85, the average rate of growth of national income was 4 per cent.

The principal causes of the growth rate being lower than 5 per cent per annum during the Plan periods have been: (i) poor performance in the agricultural sector; (ii) underestimation of the expected time of the implementation and completion of big irrigation and power projects; (iii) overestimation about the efficiency of investment operations and production targets and profits in all sectors; (iv) shortage of foreign exchange and crises arising from inflationary pressures, supply constraints and transport bottlenecks; and lastly, high capital-output ratio.

Paradox of High Saving and Investment Rates and Sluggish Growth

A paradox that is apparent in the Indian economy has been

of capital formation and sluggish growth rate of income. Between 1950-51 and 1984-85, the average growth rate of national income was 4 per cent per annum whereas both saving and investment rates as percentage of national income have been on the increase. Saving as a percentage of GDP increased from 10 per cent in 1950-51 to 22.9 per cent in 1984-85 and investment as percentage of GDP, increased from 10 per cent in 1950-51 to 23.4 per cent in 1984-85.

The growth rate of the economy is determined by trends in agricultural and industrial production in India. The trend growth rate of agricultural production during 1950-51 to 1978-79 was 2.7 per cent. The same trend continued during the Sixth Plan. The principal problems from the point of view of agricultural growth have been: "(a) the uneven rate of agricultural progress in various regions leading to considerable regional disparities in the level and pace of development; (b) the wide amplitude of yearly fluctuations in agricultural production; (c) the stagnation in production of several important crops like pulses and oilseeds; (d) the need for technologies, services and public policies that can help ecologically disadvantaged regions and also promote greatest labour absorption; and (e) the inadequacy of institutional framework for enhancing the productivity of small farmers and for producer-oriented marketing."

Between 1950-51 and 1978-79, the trend growth rate of industrial production was 6.1 per cent. But it was not uniform. It was 8 per cent during 1951-65 which slowed down to 4 per cent in 1965-79 and to 3.9 per cent in 1982-83, but picked up to 6.8 per cent in 1984-85. Many constraints have been identified both on the demand side and the supply side for the deceleration in the growth rate since 1965. The factors on the demand side have been: demand deficiency due to a significant decline in the scope for import substitution, inflationary pressures, and the failure of the domestic demand for manufactured goods to increase due to the worsening of income distribution. The principal factors on the supply side have been; the slow growth of agricultural productivity restricting the supply of raw materials, the inadequate expansion of infrastructural facilities, deceleration of public sector investment, the movement of terms of trade against industry, the foreign exchange constraint, the licensing, taxation and credit policies adversely affecting the private sector, etc.

Besides, an other factor which has been keeping growth rate of income low despite high saving and investment rates has been high capital-output ratio over the planning period. The capital-output ratio reflects the quantum as well as productivity of investment. The figures of high capital formation do not represent the real picture of the

economy because they are in 'gross' terms and not in 'real' terms. Further, they are at market prices and not at constant prices. Thus there has been a shortfall in real investment in the public sector especially due to price escalation that has led to shortfall in targets of growth rate during every Plan. Another cause for this shortfall in public investment has been inadequate return from past investment in power, irrigation, transport and public sector manufacturing industries, and shortfalls in public sector savings.

The effect of this shortfall in the quantum of public investment has been aggravated by high capital-output ratio than anticipated in the Plans. The marginal gross capital-output ratio at 1970-71 prices was about 4 per cent in the Second and Fifth Plans and 5.4 and 5.7 per cent in the Third and Fourth Plans respectively. Such high capital-output ratios can be attributed to changes in the composition of investment from engineering to chemical industries, rising real costs in such sectors as power, irrigation and mineral development, and inefficiencies in the utilisation and maintenance of existing capital stock.

Thus the paradox of high capital formation and low growth rate of income is the result of high capital-output ratio, both total and sectoral. It is, in fact, this relationship combined with high population growth rate that has been responsible for the existence of proportion of population below the poverty line.

The obvious remedy for increasing the growth rate of income is to lower the marginal capital-output ratio, given a higher saving rate. It is not enough to look at the saving-investment ratios. It is necessary to analyse both the capacity-creating effects of investment and its contribution in determining the aggregate level of effective demand and its growth. The important point is that, because of immobility of factors and differences in the adjustment process in various sectors, binding constraint may operate simultaneously. Therefore, efforts should be directed towards removing such constraints by reducing the marginal capital-output ratio and to accelerate growth in agriculture and industrial sectors.

Chapter 75

TECHNIQUES AND METHODOLOGY OF PLANNING IN INDIA

The term 'technique of planning' refers to the art, method or the process of drafting a plan. It may also be used in the sense of the methodology or methods used in formulating a plan. In other words, the technique and methodology of planning include objectives, priorities, strategies, and techniques used in the entire plan-frame of a country.

Economic planning is a technique, a means to an end, the end being the realisation of certain pre-determined and well-defined aims and objectives laid down by the central planning authority. The Planning Commission had laid down the following objectives in Indian plans: (a) to increase national income and per capital income; (b) to expand employment opportunities; (c) to reduce inequalities of income and wealth, and concentration of economic power; (d) to eradicate poverty; (e) to raise agricultural production; (f) to industrialise the economy; (g) to achieve balanced regional development; and (h) to achieve self-reliance so as to minimise the dependence on foreign aid.

These objectives run through one or the other plan and have been evolved with the experience gained in their execution. Pramit Chaudhuri has pointed toward three major shortcomings of these objectives; "First, very few of the objectives are quantified or have a time-horizon attached to them, with the exception of national income targets. Secondly, there is no discussion of the feasibility or consistency of the set of objectives that has been chosen. Thirdly, as there is no serious recognition of problems of inconsistency between the objectives, there is naturally no discussion of trade offs amongst them."¹

In order to achieve the objectives laid down in the various five-year plans, the techniques of physical planning and financial planning have been used. Physical Planning refers to the technique of target-setting with regard to agricultural and industrial production, social and transport services, consumption levels, and levels of employment, saving, investment, income, etc. On the other hand, the technique of financial planning refers to the allocation of resources in terms of

¹*The Indian Economy—Poverty and Development*, 1978

money. Financial planning is meant to secure a balance between demands and supplies of goods and services, to avoid inflation and to bring economic stability within the economy.

For the success of a plan, both physical and financial targets should be mutually consistent and well coordinated. But Indian Plans have failed to achieve both macro and micro balances in physical and financial targets. For, there are inherent structural rigidities and difficulties in the Indian economy which have prevented the attainment of such balances. In the majority of Plans, there have been crop failures thus restricting the supply in agricultural commodities. There have also been shortfalls in industrial production due to power shortages, scarcities of raw materials, transport bottlenecks, poor industrial relations, etc. At other times, there have been shortfalls in financial resources to fulfil the physical targets of a plan. These have led to imbalances and inconsistencies in physical and financial targets to plans, thereby leading to inflationary pressures and balance of payment difficulties.

Mrs Barbara Wootten defined planning "as conscious and deliberate choice of economic priorities by some public authority." Thus planning technique involves determination of priorities. The planning authority has to decide whether priority is to be given to agricultural reorganisation or to rapid industrialisation, to heavy industries or light industries, or to power, transport and social overheads.

In the First Plan, the emphasis was to create the necessary economic and social overheads like power, transport, public health, education, etc. and to develop agriculture in order to create a solid base for industrialisation in the subsequent plans. But low priority was given to the development of industries and minerals on which only 6 per cent of the total outlay was spent. This led to serious shortages of industrial raw materials, foreign exchange, etc., and to rise in prices during the Second Plan.

So in the Second Plan, 20 per cent of the total outlay was spent on the development of industries and minerals. High priority to this sector was considered essential for building a strong capital base and to increase productive and technical capacities within the economy. More emphasis was also laid on the development of cottage and small industries to create larger employment opportunities. Investment in agriculture and irrigation, and social services were also kept at a high level. But it was reduced on power from 13 per cent in the First Plan to 10 per cent in this Plan.

The failure on the agricultural front and shortages of power and consumer goods led to severe inflation and foreign exchange crisis during the Second Plan. A more balanced scheme of priorities and balanced

Third Plan. The scheme of priorities emphasised increase in agricultural production to achieve self-sufficiency in foodgrains; to meet the requirements of industrialisation and exports; to expand basic industries; to utilise fully the manpower resources and to ensure expansion of employment opportunities; and to bring about reduction in inequalities of income and wealth.

The last year of the Third Plan experienced acute shortfalls in agricultural and industrial production. Agricultural production fell to the level of the beginning of the Third Plan. So in the Fourth Plan, highest priority (24 per cent) was given to agriculture and irrigation development, and the remaining sectors received almost uniform priority (19 per cent). The scheme of priorities in other sectors was designed to encourage dispersal of industries and increase employment opportunities, to remove transport bottlenecks, to fully utilise installed power-generation capacity and to expedite the completion of existing projects; and to emphasise the spread of education, scientific research, family planning, water supply and sanitation schemes, etc. On the whole, priorities were so fixed as to maintain stability and progress towards self-sufficiency.

The scheme of priorities in the Fifth Plan was in keeping with the twin objectives of the removal of poverty and attainment of economic self-reliance. Accordingly, highest priority was given to industrial development (24 per cent), followed by agriculture and irrigation development (22 per cent), and power (19 per cent).

The Sixth Plan gave the highest priority to agriculture and irrigation (23 per cent) followed by energy, science and technology (29 per cent), transport (16 per cent) and industry (14 per cent). The aim was to increase agricultural and industrial output, to provide larger employment opportunities and to remove poverty. The emphasis is on fuller utilisation of existing capacity and on improved functioning of the power, coal and transport infrastructure.

The Seventh Plan accords the highest priority (30.4 per cent) to energy, followed by agriculture (22 per cent), social services (16.3 per cent), transport (12.8 per cent), and industry (12.5 per cent). In allocating investable funds in the plan, areas where the rates of return are higher or the needs of additional capacity are more immediate have been given preference over new projects which will yield output only after the Seventh Plan. Second, more emphasis has been laid on increases in productivity of the existing capital stock through investment in replacement, balancing equipment, and modernisation. Finally, stress has been made to ensure balance among the infrastructure sectors, the rest of the production sectors and the sector of human resource development including poverty alleviation programmes.

The fixation of investment priorities in the different Indian Plans has led to substantial progress in all sectors of the economy. It has increased agricultural production manifold, diversified the industrial sector and exports, and increased infrastructural facilities.

In fact, the determination of investment priorities of a plan are related to its development strategy. The adoption of a particular strategy is meant to achieve the objectives and targets of the Plan. There are usually two development strategies associated with the Indian planning process, one of balanced growth and the other of unbalanced growth. In the former, investments are made simultaneously in all sectors of the economy. The former strategy requires deliberately unbalancing the economy by making large investments in selected sectors of the economy.

Indian planning has been an admixture of balanced and unbalanced growth techniques. The technique of unbalanced growth was adopted in the Second Plan when greater emphasis was laid on the development of heavy industries as against agriculture and irrigation. It led to severe foreign exchange crisis and inflationary pressures. So the strategy of balanced growth has been followed since the Third Plan, though in order to achieve the various balances, the strategy of unbalanced growth has been adopted by according high priorities to certain sectors in each Plan. From the Fifth Plan, the minimum needs strategy has been adopted within the framework of the balanced growth strategy to remove poverty. The strategy underlying Indian plans has helped in increasing substantially agricultural and industrial output, infrastructural facilities, and national income. But it has been unsuccessful in reducing inflationary pressures, income inequalities, poverty and unemployment, removing balance of payments difficulties, and achieving the goal of self-reliance.

In formulating Indian economic plans, a number of methodological devices have been used from time to time. For instance, the First Five-Year Plan was based on a simple application of the Harrod-Domar growth model:

$$\Delta I \frac{1}{\alpha} = I\sigma$$

where I represents the annual rate of investment, σ is the capital output ratio, α is the marginal propensity to save and ΔI is the increase in investment.

In the model of the Plan, the rate of investment in 1950-51 was assumed as 5 per cent of national income, the capital-output ratio was taken as 3:1 and the value of α as 20 per cent. Given these values,

parameters, the rate of investment was projected to expand from 5 per cent in 1950-51 to 7 per cent in 1955-56.

For the Second Five-Year Plan, Mahalanobis built a four-sector allocation model. On the presumption that maximum funds available for investment during the Plan would be Rs 5,600 crores, he allocated them to the capital goods sector, the factory produced consumer goods sector, the household (including products) consumer goods sector and services producing sector. The model aimed at creating larger employment opportunities, building a strong capital base and increasing productive and technical capacities within the economy.

The Third Plan was based almost on the same model as the Second Plan but there was greater inter-industry consistency in its formulation. For this, the input-output technique was not actually employed by the Planning Commission. Prior to this, J. Sandee had constructed *A Demonstration Planning Model for India* by using the input-output technique. Similarly, Manne, Rudra and others built a consistency model for India's Fourth Plan. It was a 30 sector consistency model based on the Leontief inter-industry "open" system. But the actual model of the Plan was not based on this consistency model.

It was, however, the Fifth Five-Year Plan which was formulated on the basis of an input-output model prepared by the Perspective Planning Division of the Indian Planning Commission. The model of the Plan was built at 1971-72 prices, the Draft Plan model at 1972-73 prices and the Final Plan model at 1974-75 prices. It was a macro-economic 66-sector input-output model with a consumption sub-model. The model estimated commodity-wise production levels by working out their supply demand balances through a series of material balance exercises and making them consistent with the sectoral growth rates obtained through input-output model. To cross-check production levels, more independent studies were also made at the micro-level for specific commodities. For purposes of formulation of investment projects and production programmes, the projected growth rates were translated into physical targets. For certain items like coal, crude oil, iron ore, and cement which were taken as independent sectors in the input-output model, the targets were worked out directly from the sectoral growth rates. In other cases, a detailed system of material balances and other planning exercises were employed.

The use of the input-output technique has also been made in the formulation of the Sixth Plan model against the background of a perspective covering a period of 15 years from 1980-81 to 1994-95. The model consisted of an 89-sector input-output model integrating the Sixth Plan period with the perspective period through a 14 sector investment planning model. In working out the input-output model for the Sixth

Plan, technological characteristics of the economy had been taken into account. Public consumption expenditure and exports for the terminal year of the Plan had been estimated exogenously. Import projects for inter-industry use and final use for the terminal year had been endogenously derived through the use of import coefficient matrices. Private consumption expenditure on goods and services in the terminal year had been projected through the use of consumption sub-model which considered demand functions for people below and above the poverty line as well as rural and urban areas separately. The projected rates of growth in output in different sectors had been translated in terms of physical targets for important commodities in order to facilitate the formulation of necessary investment projects and production programmes. The physical targets for key commodities had been cross-checked through the system of material balances.

The Seventh Plan model has been prepared on the basis of the 89-sector classification of the input-output table which has been aggregated into 50 sectors. It assumes the rate of domestic savings at 23.3 per cent of GDP in 1984-85 which is expected to go up to 24.5 per cent in 1989-90 which implies a marginal savings rate of 28.4 per cent. The broad quantitative frame of the Plan is based on the assumption of the overall ICOR of 5. The rate of gross investment is projected to rise from 24.5 per cent of GDP in 1984-85 to 25.9 per cent in 1989-90. Based on these projections, the sectoral growth rates of output have been estimated. The growth rate of agricultural output has been estimated at 4 per cent; of minerals and industrial goods at 8.3 per cent, of electricity, gas and water supply at 12 per cent; of transport at 8 per cent; and other services at 6.6 per cent. The sectoral composition of national income in terms of gross value added has also been estimated. Agriculture and related sectors are expected to contribute 33 per cent of GDP in the terminal year of the Seventh Plan. The shares of mining, manufacturing, construction, electricity and transport are expected to be 34.4 per cent. Thus by the end of the Plan, the contributions of the agricultural sector, the industrial sector and the services sector are, in terms of income generated, projected to be roughly about one-third each.

But the input-output models do not provide solutions for the best combination of sectoral outputs or optimal combinations of techniques of production in each of the sectors. The important problems in economic planning are the allocation of scarce resources among competing sectors, and within each sector, there is a choice between providing the required output either by domestic production or by imports and it is necessary to find the optimum pattern of import substitution. The linear programming models provide the necessary extension of the consistency models of the input-output variety to

optimisation criteria. Given the objective of maximisation of income or employment, the linear programming models provide optimal solutions for combinations among sectors of techniques, including optimal combinations of domestic production and imports in each sector.² The planning authority is faced with certain constraints such as lack of sufficient capital and machinery, growing population, etc. The input-output models do not take into consideration such constraints in formulating a development plan. Linear programming models take due note of these constraints and help in evolving an optimum plan for attaining the objectives with a specified period of time. But no programming model has been used in formulating any economic plan in India so far.

The methodology of planning based either on the Harrod-Domar type model or the Mahalanobis model or the input-output models has failed to achieve the stipulated growth rates of income and per capita income, and the targeted growth rates in the various sectors of the economy. Consequently the Indian Five-Year Plans have not been able to remove poverty, unemployment, reduce inequalities of income and wealth, and attain the goal of a self-reliant economy. Further, power shortage, transport bottlenecks, balance of payments problem, and inflationary pressures have continued to persist despite more than 35 years of planning.

²Nurul Islam, "The Relevance of Development Models of Economic Planning" *Economic Bulletin for Asia and the Far East*, June-September 1970.

Chapter 76

PLANNED GROWTH WITH SOCIAL JUSTICE

INTRODUCTION

Objectives of economic plans in the developing countries in the 1950s stressed the increase in growth rates. By the end of the 1960s and the beginning of the 1970s, economists began to realise that planned growth in such economies had failed to bring social justice. They found that emphasis on the growth rates had increased poverty, inequality of income and wealth, and unemployment, instead of reducing them. The very idea of growth without social justice has been called into question by economists and policy makers. They hold that development strategy should be oriented toward greater social justice. Economic development should aim at maximising the growth of GNP and at the same time eradicate poverty, reduce disparities of income and wealth, and create larger economic opportunities.

The question whether social justice has to be sacrificed for larger growth, or is it possible to achieve social justice along with growth, has already been discussed under *Growth vs Equality* in Chapter 71.

In the present chapter, we discuss problems of growth with social justice along with their remedies in the Indian context. Growth with social justice or distributive justice means that planning should lead to greater equality in income and wealth; there should be progressive reduction of concentration of income, wealth and economic power; and benefits of economic growth should accrue more and more to the relatively less privileged class of society.

INDIAN PLANS AND GROWTH WITH SOCIAL JUSTICE

The question arises how far our plans have achieved economic growth with social justice.

The First Five-Year Plan was a preparatory and transitional plan. So it did not lay down any objective for achieving growth with social justice. It was the Second Plan which aimed to secure to the greatest extent possible opportunities for weaker and unprivileged sections of the people. The Plan had the broad objective of establishing a socialist pattern of society in a welfare state. Keeping in view this broad

optimisation criteria. Given the objective of maximisation of income or employment, the linear programming models provide optimal solutions for combinations among sectors of techniques, including optimal combinations of domestic production and imports in each sector.² The planning authority is faced with certain constraints such as lack of sufficient capital and machinery, growing population, etc. The input-output models do not take into consideration such constraints in formulating a development plan. Linear programming models take due note of these constraints and help in evolving an optimum plan for attaining the objectives with a specified period of time. But no programming model has been used in formulating any economic plan in India so far.

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objective, the Plan aimed at achieving growth with social justice by (a) sizeable increase in national income so as to raise the level of living in the country; (b) a large expansion of employment opportunities; and (c) reduction of income and wealth inequalities, and having a more even distribution of economic power. Each State passed laws to abolish intermediaries by 1954. This led to the distribution of 57.7 lakh hectares to landless agriculturists. But this was just like a drop in the ocean, for the Plan failed to achieve either growth or social justice.

The Third Plan also aimed to expanding employment opportunities and reducing disparities in income and wealth. But the Plan failed to create enough jobs to meet the overall demand for employment opportunities arising from growth of population, migration from rural to urban areas and educational development. However, some progress was made for the welfare of backward class and tribes, houses for industrial workers and low income groups. But the Plan could do little toward reducing disparities and eliminating poverty.

The Fourth Plan's broad objective was rapid economic development accompanied by continuous progress toward equality and social justice. It placed emphasis on the common man, the weaker sections and the less privileged ones. To achieve these broad objectives, it laid emphasis on greater equality in income and wealth; progressive reduction of concentration of incomes, wealth and economic power; and more benefits to the relatively less privileged classes of society, especially the scheduled castes and scheduled tribes.

To enable small farmers to share the benefit of agricultural development, they were provided more facilities in the form of minor irrigation, agricultural credit and input services; and dry land farming techniques. The Plan also aimed at dispersal of industries for creating non-farm employment in smaller towns and rural areas. But, as in the case of the previous Plans, the Fourth Plan could not achieve growth with social justice.

The two strategic objectives of the Fifth Plan were the removal of poverty and attainment of self-reliance. Accepting that underdevelopment and inequality are the twin causes of poverty, the Plan aimed at diminishing concentration of economic power by creating an efficient and dynamic public sector ensuring improvement in productivity, especially in agriculture, and by encouraging new entrepreneurs in backward areas. The policy of removal of poverty included the overall growth rate of 4.37 per cent of the economy, effective and integrated population policy, the provision for the National Programme of Minimum Needs, the emphasis on employment opportunities, the stress on the uplift of backward classes and development of backward regions, and an efficient public procurement and distribution system to ensure

availability of essential goods to the poorer sections of the country at reasonable prices.

The Fifth Five-Year Plan was the first document which specifically aimed at the objective of achieving growth with social justice. This was followed by the Sixth Five-Year Plan (1980-85) with the same objectives. The Sixth Plan aimed at achieving the annual growth rate of 5.2 per cent in GDP, 3.3 per cent in per capita income, and a progressive reduction in the incidence of poverty and unemployment. The other objectives toward this direction were improving the quality of life of the people in general with special reference to the economically and social handicapped population through the Minimum Needs Programme; strengthening the redistributive bias of public policies and services in favour of the poor thereby contributing

on IRDP, NREP and RLEGP. The Seventh Plan aims at carrying forward the programmes of the Sixth Plan for the reduction of poverty, unemployment and inequalities.

The above resume reveals that every five-year Plan in India from the second Plan onwards has been emphasising the objectives of planned growth and social justice and also suggesting measures to achieve this. These Plans have been emphasising the alleviation of poverty, removal of unemployment, and reduction in inequalities of income and wealth. The various measures towards achieving growth with social justice have been land reforms, abolition of bonded labour, liquidation of rural indebtedness, fixation of minimum wages for farm labour, drive against economic offenders, measures towards reduction of concentration of incomes, wealth and economic power, etc. But empirical evidence has shown that inequalities of income and wealth, poverty, and unemployment have increased instead of diminishing over the Plan periods. Thus Indian Plans have failed to achieve growth with social justice. The following have been the difficulties which have stood in the way of achieving these two objectives:

Difficulties in Achieving Growth with Social Justice

Since poverty, unemployment and inequalities are not only the cause but also the effect of each other, their spread during the period of planned economic growth has made it difficult to achieve these objectives.

Available data reveal that 40.4 per cent of the rural population in 1983-84 was still below the poverty line. This makes mockery of reduction in the number of people below the poverty line. Poverty is

reflected in low consumption levels, low per capita income and low standard of living with people suffering from hunger, malnutrition, and chronic and debilitating diseases. Thus poverty is still the bane of the majority of population in India. This has prevented the achievement of growth with social justice.

Another problem is that of increasing unemployment in India with every five-year Plan. There were 3.3 million unemployed persons at the beginning of the First Plan, and their number had increased to 13.6 millions at the beginning of the Fifth Plan. Similarly, the number of educated unemployed had increased from 0.6 million in 1961 to 7.2 million in 1980. Unemployment is closely related to poverty. This has been revealed by the 32nd NSS. On the basis of per month per capita expenditure, it has been found that persons with per capita expenditure of less than Rs 11 per month have unemployment rate of 22.4 per cent in rural India and 29.2 per cent in urban India. As per capita expenditure increases with the increase in income, the incidence of poverty declines. For instance, in the per capita expenditure group of Rs 100 per month, the unemployment rate is 3.2 per cent in rural areas and 4.9 per cent in urban areas. This shows that with 40 per cent of people below the poverty line, the unemployment rate has been quite high in India. Thus the problem of unemployment has prevented the achievement of growth with social justice.

The failure of increase in employment opportunities has been due to the slow growth of the Indian economy. Despite more than three decades of planning, the Indian economy has grown at a slow rate of 4 per cent per annum. The vast and varied natural resources still remain underutilised and misutilised. The transformation of agriculture has been slow. The industrial growth has been sluggish, and so has been the services sector. The all round slow growth of the economy has been an important factor in not achieving growth with social justice.

Another problem that has stood in the way of social justice has been the phenomenal growth of population during 1951-81. During these three decades of planning, population increased on an average at the rate of 2.2 per cent per annum. This increase has primarily been shared by the lower middle and the poorer sections of the society. With already low levels of income and high rate of unemployment, the increase in family members has further reduced their incomes and brought them to the brink of poverty line. The worst hit are the small landowners who have been burdened by the pressure of large families on their small holdings. This has forced them to sell their meagre holdings to the large landowners, thereby increasing inequalities of income and wealth.

One of the important problems preventing social justice in India has been the inequitable distribution of the means of production. One of the

means of production is land. More than 80 per cent of the people who live in rural India are dependent on land in one way or the other. But there are great disparities of income and wealth between owners and tillers of land. 20 per cent do not own any land. A vast majority has small uneconomic holdings, while a small majority of the rural population owns large holdings. The various land reforms have failed to remove inequalities of income and wealth. The majority of landless workers work as tenants but they do not get a fair share of the produce. They have to pay excessive rents. Further, they live a life of constant insecurity because of the fear of eviction from land. They are, therefore, forced to work like bonded labour and under extreme poverty. Again consolidation of scattered holdings has made little progress except in Punjab, Haryana and Uttar Pradesh. Regarding ceiling on land holdings. Of the nearly 7.2 million acres of land declared surplus under the revised ceiling laws, 2.7 million acres have been taken possession of in the various States. Of this, nearly 4.4 million acres have been distributed among more than 1.3 million peasants belonging to the weaker sections of the society. Though the last measures has tended to bring distributive justice to some extent yet the problem of inequitable land distribution is so gigantic that it requires much greater efforts for its solution.

The second means of production is the capital. People being poor, capital is scarce in India. It is concentrated in the hands of a few rich who use it to their advantage. In rural India, the rich farmers have been able to mechanise agriculture by using tractors, pumping sets, fertilizers, improved seeds, etc. While in urban India, the few business houses which possess majority capital have multiplied their wealth manifold.

Again, the use of capital-intensive techniques in both rural and urban sectors has led to greater distributive injustice because it has deprived the masses of larger and gainful employment opportunities.

Besides, fiscal and monetary policies of the Government have prevented the achievement of growth with social justice in India. The taxation policies of Central and State Governments have increased inequalities of income and wealth. There has been a greater reliance on indirect taxes. The share of indirect taxes rose from 63 per cent in 1950-51 to 87 per cent in 1984-85. Thus indirect taxes have been on the increase from the beginning of the planning era in India. Consequently, the lower middle income group and poorer sections of the society are being reduced to abject poverty under the pressure of ever mounting indirect taxes. On the other hand, the burden of direct taxes has been declining on the upper middle and higher income groups, they are becoming better off. Thus the regressive and inequitable tax structure in India has led to distributive injustice.

Again, there has been widespread tax evasion on the part of the upper middle and higher income groups who have been amassing wealth through black money thereby becoming richer. Moreover, businessmen in India follow corrupt business practices such as concealment of non-taxed agricultural incomes, etc. There are also many loopholes in the taxation laws and the tax enforcement machinery is also ineffective in finding out the methods of tax evasion being followed by the business community in India.

The Government's policy to mop up black money by issuing Special Bearer Bonds was a step towards legalisation of tax evasion and black money. The Government of India issued Bonds for sale from 2 February 1981 to 30 April 1981 and again from 1 December 1981 to 9 January 1982. The Bonds issued at par, had a face value of Rs 10,000 and a maturity period of 10 years. On maturity these bonds are redeemable at Rs 12,000 per Bond. "The holders of such bonds are assured immunity from disclosing the source of money and the value of the Bonds is exempt from Wealth Tax. The transfer of bonds will also not attract capital gains and gift taxes and their premium income on redemption would be free from income tax."¹ Such a measure is highly inequitable and unjustified. A similar measure has been the rate of Indira Vikas Patras since 1986.

The deliberate policy of industrial dispersal has led to the development of some new industrial centres situated away from the older centres like Ahmedabad, Bombay and Calcutta. But the degree of success achieved has been limited because older centres have continued to attract more and more people. This has increased congestion, slum areas and the miseries associated with urban centres. In agriculture, the new agricultural strategy has accentuated regional imbalances. The imbalances in industrial and agricultural advance are reflected in the large differences between states in the percentage of population below the poverty line. It was 15 per cent in Punjab and 66 per cent in Orissa.

Moreover, Indian companies enjoy varied types of concessions. As a result, many companies earning handsome profits do not pay tax. Prof. Anand P. Gupta of the Indian Institute of Management in a recent study of a number of Indian companies found that they had done a good job of extracting juice out of the present tax system. For instance, one Bombay-based company which reported handsome profit during the five year (1976-77 to 1980-81), had no income-tax liability, even though it reported profit as much as 131.10 per cent on its equity capital for the 1980-81.²

¹Government of India, *Economic Survey*, 1981-82.

²*The Economic Times*, 1 March 1982.

Further, taxing the city dwellers and salaried groups but exempting the farming community does not lead to distributive justice. In recent years, a large number of farmers in certain parts of the country have become quite prosperous but they are not levied agricultural income-tax. Moreover, rich and influential farmers enjoy a number of concessions, incentives and facilities from the State. All this has tended to make them better off and the marginal farmers worse off because the latter do not possess enough resources to benefit from concessions and facilities.

One of the important causes of the existence of distributional injustice in India has been the inflationary rise in prices since the beginning of the Second Plan. Whereas prices have been rising continuously, incomes of the fixed income groups have failed to increase proportionately. As a result, the working class, the middle class, the landless agricultural workers, the marginal farmers and other low-income groups have been reduced to abject poverty and misery. On the other hand, the big landlords, the businessmen, the profiteers, the speculators, the black marketeers, the traders and industrialists have been earning higher incomes and amassing wealth. The causes for this are the fiscal and monetary policies of the Government, such as too much dependence on indirect taxes, deficit finance, increase in money supply, increase in development expenditure of the Centre and States, huge investments in long-run projects, etc.

We may conclude that despite more than three decades of planned development, large segments of the population have yet to share in the process of development. Poverty still stalks the land, unemployment and inequalities show no signs of reduction. The goal of growth with social justice is a distant dream. What is needed is a more effective implementation of asset transfer measures such as land reforms, more equitable distribution of credit and a coordinated effort that enables the poor to join the mainstream of economic activity and provides them with an opportunity for advancement. This will require firstly, an improvement in their productivity and earning power in their existing activity; secondly, supplementary employment in new activities to use up any spare labour time; and thirdly, training credit and support systems to assist them in both their existing and new activities.³

³For further suggestions to achieve Growth with Social Justice, refer to Policy Measures in the Chapter on Economic Inequalities in India.

Chapter 77

PLANNING MACHINERY IN INDIA

The Planning Commission was set up on 15 March 1950 by a Resolution of the Government of India under the Chairmanship of Pandit Jawaharlal Nehru to prepare a plan for the "most effective and balanced utilisation of the country's resources." It has the responsibility of preparing economic plans, making recommendations on economic and social goals, policies and institutions, and making appraisals of the progress of various schemes under the plan. It is an advisory body which is not responsible for the execution of development programmes.

FUNCTIONS OF THE PLANNING COMMISSION

The Planning Commission performs the following functions:

1. To make an assessment of the material, capital and human resources of the country, and to find out the possibilities of increasing such resources as are deficient in relation to the requirements of the country.
2. To formulate a plan for the most effective and balanced utilisation of the country's resources.
3. To lay down the stages in which the plan should be carried out and to recommend the allocation of resources for the completion of each stage on the basis of priorities.
4. To point out the factors which tend to retard economic development, and determine the conditions which should be established for the successful execution of the plan, keeping in view the current social and political situation.
5. To determine the nature of the machinery which will be necessary for achieving the successful implementation of each stage of the plan in all its aspects.
6. To appraise from time to time the progress made in the execution of each stage of the plan and to recommend the adjustments of policy and measures that such appraisal may show to be necessary.
7. To make such interim or ancillary recommendations as might be appropriate after considering the prevailing economic conditions, current policies, measures and development programmes or for facilitating the discharge of duties assigned to it.

8. To examine such specific problems as may be referred to it for advice by Central and State Governments.

Thus the Planning Commission is essentially a staff agency, its main functions being to advise the Government of India in matters pertaining to planning and development.

ADMINISTRATIVE ORGANISATION

The Planning Commission is a multi-member body which includes five full time members and a few part time members who are important Cabinet Ministers. Full time members are eminent men, administrators and technical experts. They hold the rank of a Minister. The Prime Minister of India has been the Chairman of the Planning Commission since its inception. This has added considerably to the prestige of the Commission and has helped in its coordinating functions. As its Chairman, the Prime Minister has given direction on all major issues relating to planning in India.

During 1952-53 and 1960-63, the Minister of Planning of the Government of India was also the Deputy Chairman of the Planning Commission. On the recommendations of the Administrative Reforms Commission in 1967, the Planning Commission was reconstituted. Now it consists of the Prime Minister as the Chairman, a full time Deputy Chairman and four to five full time members, and some Cabinet Ministers as part time members. There is a secretary to the Commission. There is also an additional secretary who is incharge of administration and coordination within the Commission. In addition, there are some senior officers in the ranks of deputy secretaries and under secretaries who watch the progress of different programmes in the States.

The Planning Commission work as a collective body and has a collective responsibility, but for convenience each member has been given charge of a group of divisions or subjects. The Deputy Chairman is incharge of plan coordination, plan evaluation, administration and servicing, and subjects under economic division. The other full-time members are incharge of one each of the four following groups—industry, labour, transport and power groups; agriculture and development group; perspective planning groups; and scientific research and social services group.

DIVISIONS

have undergone many changes with the passage of time
divisions exist at present.

General Divisions. There are six general divisions within the Planning Commission. They are: (1) Economic Division with sub-sections for financial resources, economic policy and growth, international trade and development, price policy, and inter-industry studies. (2) Perspective Planning Division. (3) Labour and Employment Division. (4) Statistics and Surveys Division which is an integral part of the Central Statistical Organisation. (5) Resources and Scientific Research Division. (6) Organisation and Administration Division.

Subjects Divisions. There are ten subjects division at present. They are: (1) Agriculture Division which also includes Cooperation and Community Development. (2) Irrigation and Power Division. (3) Land Reforms Division. (4) Industries, Minerals and Public Enterprises Division. (5) Village and Small Industries Division. (6) Transport and Communications Division. (7) Education Division. (8) Health and Family Welfare Division. (9) Housing and Urban Development Division. (10) Social Welfare Division including Welfare of Backward Classes.

Coordination Divisions. There are two coordination divisions of the Planning Commission. First, there is the Programme Administrative Division which coordinates and follows up the plans of States and gives advice to them. It also studies progress of the development aid given by the Centre to the States and suggests measures for the implementation of the various development programmes. Second, there is the Plan Coordination Division which coordinates the working of the various divisions of the Planning Commission. There is also a Central Coordination Section which coordinates the work of the meetings of the Commission. Both these divisions work under separate directors.

Special Development Programme Division. This is sub-divided into Rural Works Division and Public Coordination Division. The former is concerned with local development works involving self-help at the local level and the rural works programme for the better utilisation of rural manpower resources. The latter is concerned with special programmes for enlisting public cooperation in national development.

Evaluation Divisions. The Planning Commission has two important divisions relating to the evaluation of programmes and projects of a plan. First, there is the Project Appraisal Division. It is a very powerful division which acts as a Secretariat of the Public Investment Board. It also helps the various Ministries in examining alternative projects and the feasibility and potentiality of projects. The second is the Evaluation Division which evaluates the various programmes in a plan. This division has the Programme Evaluation Organisation which was specially set up to evaluate the working of Community Development Programme. Now it is entrusted with the evaluation of rural develop-

ment programmes.

Other Bodies

There are number of other bodies associated with the formulation and implementation of a plan. They are explained as under:

National Planning Council. It was in February 1965 that the Planning Commission constituted a National Planning Council to help the former in formulating the Fourth Plan. The Council included scientists, engineers, economists and other experts. The Council set up 12 study groups for detailed consideration of selected problems relating to the main sectors of development in the Fourth Plan. These groups related to (1) Irrigation and Power. (2) Management. (3) Agriculture and Land Reforms. (4) Education. (5) Scientific Research, (6) Labour Employment and Social Welfare. (7) Industry and Minerals. (8) Transport. (9) Family Planning. (10) Manpower Planning. (11) International Trade. (12) Natural Resources. They were asked to submit their reports to the Planning Commission within two years. Such groups are constituted at the time of the formulation of every plan whenever a National Planning Council is set up.

National Development Council. India has a federal constitution. It is, therefore, important that there should be close cooperation between the Planning Commission and the States. This coordination is achieved through the National Development Council which is composed of the Prime Minister, Chief Ministers of all the States and members of the Planning Commission. Ministers of the Central Government also participate in its meetings. The Council makes recommendations to the Central as well as State Governments.

The main functions of the National Development Council are. (1) to review the working of the national plan from time to time; (2) to consider important questions of social and economic policy affecting national development; (3) to recommend measures for the achievement of aims and targets of the national plan, (4) to secure the active participation and cooperation of the people; (5) to improve the efficiency of the administrative services. (6) to ensure the fullest development of the less developed regions and sections of the community; and (7) to build up resources for national development.

The National Development Council is a consultative body and had no statutory authority. It meets only twice at the time of the approval of a plan.

Research Programmes Committee. The Research Programmes Committee has been set up under the Planning Commission since the First Five-Year Plan. The Committee consists of leading economists and research scientists. It initiates research projects through universit

research institutes for the investigation and study of economic, social and administrative aspects of development. For all this, it gives financial assistance. Some of the institutions which carry on research on behalf of the Committee are Indian Statistical Institute, National Council of Applied Economic Research, Institute of Economic Growth, Institute of Applied Manpower Research, Indian Council of Social Sciences Research, etc.

Advisory Bodies. The Planning Commission is also assisted by a number of advisory bodies or experts. They give advice on different aspects of development programmes. They relate to irrigation, flood control, and power projects, agriculture, land reforms, education, housing, regional development, etc. The Commission has at present 18 advisers as compared with 3 in 1952. Besides, there are the Consultative Committee of Members of Parliament for the Planning Commission and the Prime Minister's Informal Consultative Committee for Planning. The Planning Commission also holds discussions with representatives of trade and industry before and after the formulation of the Plan, as with Indian Chambers of Commerce and Industry, All India Manufacturers' Organisation, etc.

Associated Bodies. Besides, there are certain associated bodies which help in the formulation of a plan. They are the various Central Ministries, Economic Division of the Reserve Bank of India, Central Statistical Organisation, etc. For instance, the CSO help by collecting data and calculating statistical information for the formulation and evaluation of a plan.

Working Groups. The Planning Commission also appoints working groups at the time of the formulation of a plan. These working groups relate of agriculture, fuel, fertilisers, resources, general education, industrial machinery, etc. The reports of these working groups form the basic material for the formulation of a plan. These were 21 working groups at the time of the formulation of the Sixth Five-Year Plan.

A Critical Appraisal of the Working of the Planning Machinery

The Planning Commission occupies a unique position as a Government organisation. It is a staff agency of the Government of India which has been entrusted with the task of formulating national economic plans. Although it does not have either a constitution of statutory authority, yet it wields great power in formulating and influencing Government policies and programmes. It also coordinates policies and programmes originating from other Government agencies.

The vast planning machinery evolved by the Planning Commission over the years has been successful in a number of ways.

The various plans formulated by the Planning Commission have

significantly transformed the Indian economy from a stagnat to a developing state. There has been all round progress. Agriculture has been resolutionised. Industry has been tremendously developed. Scientific and technological talent has crossed national boundaries. Infrastructural facilities has spread throughout the country.

It is a major contribution of the Commission it has kept a large share of investment go into infrastructural which otherwise might not have gone. But for the Commission's intervention in sectoral allocations, particularly between agriculture and industrial infrastrucuter, there would be far greater sectoral imbalance in our economy.

The Planning Commission has been instrumental in creating the Gadgil formula for the development of backward states. Through this formula, it has titled per capita plan expenditure in favour of the backward States to enable them to undertake development plans or more rational basis.¹

Another important contribution made by the Planning Commission has been the setting up of machinery for evaluation and appraising plan programmes and projects. Its Evaluation Division and Project Appraisal Division, and the Programme Evaluation Organisation of the former Division have been examining projects and programmes and their feasibility and potentiality. Earlier, the Committee on Plan Projects had done a lot in this connection.

The Planning Commission is also created with introducing the practice of preparing and publishing reviews relating to the progress achieved during the plan period. Though this practice of publishing mid-term reviews of five-year plans has been discontinued since 1960, yet every five-year plan presents a brief review of what has happened previously.

A singular contribution has been made by the Planning Commission toward encouraging research in social sciences through the Research Programmes Committee. This Committee has encouraged the development of research centres and research on development problems through them.

In spite of these achievements, the Planning Commission has been severely criticised on the following grounds:

1. The Commission is not a statutory body. It was created by a resolution of the Union Cabinet on 15 March 1950. But it yields unlimited powers. Its critics describe it is a "parallel cabinet", "the fifth wheel of the coach", and a "super cabinet". It is an advisory body possessing on legal status. But its suggestions to Central Ministries and

¹G.D. Sethi, "Limited but Crucial Role of Planning Commission," *The Economic Times*, 2 January 1982.

State Governments are in the form of orders which they have to carry out. This is because they are considered to be the decisions of the Central Cabinet. Even the recommendations made by a statutory body like the Finance Commission are changed by the Central Cabinet on the advice of the Planning Commission.

2. Critics point out that the planning machinery in India is politically motivated. Some call it "politics of planning." Whenever a new Government assumes office at the Centre, it reorganises the entire commission. The Deputy Chairman, the full time members and part time members of the commission are appointed by the new Government. Thus the Commission becomes politically biased. But this criticism is unfounded because the Government has to carry out its economic policies which it unfolds to the electorate at the time of elections and wins on that basis. It is, therefore, essential to have such members on the Commission who formulate such policies in the national plan. Prof Paranjape² points out in this connection that the five-year plan documents or at least their drafts were prepared and published before the five yearly general elections of 1951, 1956 and 1961. But one cannot find fault with this. "To some extent, especially when the ruling Congress party was almost unchallenged in its way, the plan documents being used in this way were perhaps useful to create greater awareness among political workers, and at least some of the voters, of economic development and related problems as one of the important aspects of governance in India."

3. One of the serious criticisms of the Planning Commission is that the States have no say in the formulation of national plans or in the formation of the Commission or in its day to day working. It is a body which is entirely under the Union Cabinet. This goes against the very principle of a federal government. The only forum at which the State Governments as consulted, is the National Development Council which consists of the Chief Ministers of States, the Prime Minister, the members of the Planning Commission and some Central Ministers. But the Council meets only once or twice to approve the draft plan prepared by the Planning Commission. "The meetings of the Council are more or less ritualistic except for some representatives raising a chorus of demands for more Central assistance for their plan projects, and also suggesting relative increases in the resources made available to their own States." Thus the National Development Council is a forum for discussion and it does not possess any formal or legal authority. So the States have no say in the formulation of the national plan except that they are asked to submit their plans concerning them. But it is not

². H.K. Paranjape, "Machinery for Planned Development," *ibid.*

obligatory for the Planning Commission to accept them. There is, however, another side of the picture. Some of the States ruled by the opposition parties adopt a dog in the manager policy. They do not execute the plan the way they are expected to do. They also do not like any guidance from the Commission and consider it as an infringement on their autonomy.

4. The Planning Commission is criticised for its defective procedure of giving financial assistance and grants to the States. Its method of giving matching grants. The Planning Commission has itself drawn the attention of the government is unsatisfactory because those States which inflate the figures of their investment plans and those having greater political influence are able to secure larger financial assistance. Thus the Planning Commission's procedure of allocating development funds to the States is defective.

5. The Planning Commission being a non-statutory body has no responsibility either for failure or non-implementation of plan programmes. This has created a strange situation of power without responsibility. "Other Ministries treat the Planning Commission as a necessary evil. It is an unavoidable stumbling block. Other use the Planning as a convenient scapegoat for their own failure, still others refer matters to the Commission to delay them."³

6. The Commission has been criticised for discontinuing the practice of having discussions with a number of advisory groups and panels of experts from different walks of life. Some groups like the Panel of Economists played a crucial role in influencing plan formulations and policy directions in the past. Prof. Gadgil as the Deputy Chairman of the Commission abolished all such groups and panels. "The result has been that the Planning Commission, though it is supposed to be an independent and largely non-official body, has lost complete touch with non-official opinion, and it is one of the reasons that it is tending to become more like Government department than an independent Planning Commission of the type which existed in the past."⁴

7. One of the serious defects of the Planning Commission is that it is concerned only with the formulation of a plan and not its implementation. Plan-implementation is the work of the Centre and State Governments. The latter are not able to implement properly the various programmes due to redtapism, corruption and inefficiency. This dyarchy in plan formulation and implementation has led critics to say that Indian plans are efficient in formulation and failure in implementation.

³A.N. Prabhu, "Reporting Commission down the Memory Lane," *The Economic Times*, 3 January, 1982

⁴V.K.R.V. Rao, "A Comprehensive Education," *ibid.*

8. Critics have criticised the *ad hoc* formation of Planning Commission with no fixed criteria as to the number of members, their qualifications and tenure of office. Since its constitution in March 1950, its formation has entirely depended on the Prime Minister because it is a non-statutory body. Consequently, it is more like an administrative machinery than a goal setter and path maker.⁵

9. The above noted weaknesses have stood in the way of proper plan-implementation in India and also in creating periods of "Plan Holiday", as between 1967-1969 which came to be known the period of Annual Plans. Its non-statutory character led to the termination of the Fifth Five-Year Plan in 1978, thereby making it a four-year plan. The starting of the Sixth Plan in 1980 made the year 1979 again one of Plan holiday.

10. In recent years the administrative machinery for plan implementation has deteriorated. As a result, certain plan objective simply remain paper targets towards this aspect in the various plan documents up to the Fifth Plan. It has emphasised the need to improve the planning machinery in the Ministries at the Centre and in the States. But nothing substantial has been done in this direction. For instance, not many States have established Planning Boards and those which have, they keep them as advisory bodies. In most States, planning continues to be spasmodic.

11. Further, there is no organisation either at the Centre or in the States for systematic monitoring of the progress of programmes and projects. The Planning Commission reviewed the mid-term progress of the first two Five-Year Plans. But it stopped this exercise for the subsequent Plans. The lack of systematic reviewing and the failure to bring about timely adjustments in important projects and programmes, and also in the aggregate plans, have led to non-fulfilment of the objectives and targets.

Suggestions

The Administrative Reforms Commission in April 1967 and a number of economists and experts associated with the Planning Commission have given suggestions to improve its functioning.

The Planning Commission should be made a statutory independent body with whole times members with fixed tenure. But "it should function less like a bloated Central Government department, and more like a real Planning Body, which draws up Plans in terms of priorities, balances and coordination for achieving a set series of objectives. ... The detailed work of ... implementation should vest with the Central

⁵Ishwar Dayal, "Planning Commission," *The Economic Times*, 25 July 1980.

Ministries and Governments.⁶

After formulating the plan, major work of the Planning Commission should be to monitor, review and evaluate implementation of the plan and suggest modifications in the light of actual results.

"It is also important that the Planning Commission should have a machinery to see that the projects coming before them are properly formulated both in terms of financial outlays and time schedules and also in terms of coordination in time and space of the different projects."⁷

The Planning Commission should re-establish contacts with experts from various fields for advice on different aspect of planning. There should be greater involvement of academics, scientists, social scientists, professionals from industry and trade, members from other political parties and Members of Parliament.

Prof V.K.R.V. Rao suggests that the Planning Commission should be freed from having its approval to all sorts of small and minor projects.

Further, the Planning Commission should concern itself with development grants to the States and should not interfere with the non-development grants recommended by the Finance Commission to the States.

Last but not the least, the State Governments should establish statutory independent Planning Boards on the lines of the Planning Commission. They should have whole-time members with fixed tenure, who should be entrusted with the task of preparing and reviewing State Plans for the benefit of the Planning Commission. The planning process at the State level "should be spread downward to the district and taluk levels and carried out in a manner that would assure attention to local needs, local resources and local constraints and also evoke local participation."

⁶V.K.R.V. Rao, *op. cit.*

⁷Ibid.

Chapter 78

PUBLIC SECTOR IN INDIA

ROLE IN ECONOMIC DEVELOPMENT

Public sector plays an important role in accelerating the development of underdeveloped countries. In such economies the private sector is engaged in the production of a few consumer goods and in working plantations and mines. Its principal motive is to earn profits. It is, however, shy to invest in those channels which require large investments, have long gestation periods and where the return on capital is uncertain. Therefore, exclusive dependence on the private sector cannot accelerate the pace of development. It is, however, the state which is capable of making huge investments in establishing public sector enterprises. The public sector can be extended over a wide range of economic activities that tend to accelerate development. The importance of public sector lies in fulfilling the following objectives:

To Provide Public Utilities. The establishment of public sector undertakings in the fields of road, sea and air transport, railways, electricity, water supply, postal, telegraph and telephone services benefits the development of the agricultural and industrial sectors of the economy. In fact, the timely creation of overhead capital through public undertakings facilitates investments in directly productive activities on the part of the private sector which, in turn, lead to the rapid development of such economies.

To Develop Natural Resources. For development, underdeveloped countries need to develop and conserve their natural resources in the most efficient manner. It is not that they do not possess them, but they are underutilised, unutilised or misutilised by private enterprise. The establishment of public undertakings in the field of mining, forestry, and fisheries, as the case may be, lead to their exploitation, the tapping of new sources, and research for harnessing them in an efficient manner. The production of minerals, in particular, leads to the building up of the domestic base for capital goods and also dispenses with imports of industrial raw materials thereby saving foreign exchange.

To Develop Basic and Key Industries. Further, in order to accelerate the rate of economic development, the establishment of basic and key industries like the iron and steel, heavy electricals, heavy chemicals,

fertilisers, machine tools, etc., is essential. Such industries require huge investments and have long gestation periods. Private enterprise is, therefore, reluctant to undertake them. It is only when they are established in the public sector that rapid development takes place. The development of basic and key industries under the aegis of the state dispenses with the imports of machinery equipment and basic and intermediate goods, and ultimately leads the economy to the path of self-sustained growth.

To Help Private Enterprise. Moreover, heavy investments in economic and social overheads on the part of the state in establishing public undertakings create the necessary conditions for the expansion of the private sector. The formation of public undertakings like financial corporations, investment trusts, state banks, etc., helps in providing direct financial assistance by way of loans and credits to the private sector.

To Remove Exploitation In Trade. Small producers in underdeveloped countries suffer from the lack of marketing organisation and intelligence. They are exploited by intermediaries and are not given remunerative prices for their products. The state can remove this exploitation by establishing public undertakings in the field of internal and external trade. When producers receive fair prices for their products they will tend to increase production. Moreover, reasonable profits accruing to state trading corporations will be siphoned off to the treasury for investment in productive channels.

Indirect Benefits. Besides, the public sector leads to a number of indirect benefits which help the development of the economy. In underdeveloped countries unemployment is widespread. The setting up of public enterprises in different fields of economic activity leads to the employment of all types of labour—skilled and unskilled. Balanced economic development requires the location of public enterprises on priority basis in backward areas. Thus public undertakings lead to balanced regional development, increase the incomes of the people, improve their living standards, and cause an increase in their productive efficiency. The operation of public sector undertakings in a particular area creates the demand for such services as water, transport, electricity, education, housing, etc. Moreover, the creation of demand on a large scale for various goods by the wage earners in such undertakings leads to the development of ancillary industries and trades, and small-scale industries. Certain public undertakings which provide milk, water, drugs, fertiliser, gas, postal transport services at low prices, have strong redistributive effects. The consumers are able to consume them more, spend less money on them, and are left with a larger income for buying other goods and services. Besides, the creation of public

undertakings in transport, electricity, gas, water, postal, telephone and telegraph services prevents the emergence of *monopolies* and concentration of wealth.

Source of Capital Formation. Lastly, public sector enterprises are an important source of capital formation. When they are operated on profit-price policy like private undertakings, they earn sufficient profits which can be partly ploughed back for reinvestment and partly for utilisation by the state in other projects. The running of public undertakings on profit basis reduces the need for borrowing from external sources and debt servicing, and even dispenses with deficit financing. Surpluses accruing from these enterprises provide adequate funds for improvement, modernisation, and expansion of the plants. Thus profits of public undertakings are an important source for the financing of economic development.

WORKING OF PUBLIC SECTOR IN INDIA

Public sector in India covers a vast and varied range of activities like railways, post and telegraphs, currency and mint, forests, hydroelectric projects, multipurpose river valley schemes, road and air transport, shipping, locomotive, oil exploration and refining, electric goods, machine tools, chemicals, fertilisers, mining, metallurgy, industrial financing, 20 nationalized banks, insurance, etc. With the exception of a few undertakings like insurance, twenty banks, air transport, Hindustan Shipyard, Praga Tools, Hindustan Zinc, etc., which the state took over from private enterprise, the majority of public undertakings are the result of the entrepreneurial efforts of the state.

The industrial and commercial undertakings in the public sector in India are classified by the Bureau of Public Enterprises into three groups: (i) Undertakings run directly by the departments or executive agencies of the Government. These include besides railways, post and telegraphs, even other undertakings like Indian Security Press, Delhi Milk Scheme, Kolar Gold Mines, etc. (ii) Undertakings run by statutory corporations like Life Insurance Corporation, Central Warehousing Corporation, Air India, Indian Airlines, Oil and Natural Gas Commission, Food Corporation of India etc. (iii) Undertakings run by Government companies registered in accordance with the provisions of the Indian Companies Act, 1956.

Performance of Public Enterprises. Central public enterprises play a very important role in India's economic development which can be discussed in the light of their major objectives. These also reflect their performance.

Investment Growth. The investment in Central public enterprises has grown appreciably over the years, as indicated in Table 75.1.

TABLE 75.1. GROWTH OF PUBLIC SECTOR ENTERPRISES IN INDIA

Year ending March 31	Investment in Rs. crores	Number of Running Enterprises
1951	29	5
1956	81	21
1961	953	48
1966	2,415	74
1969	3,902	85
1974	6,237	122
1979	13,969	159
1984	35,394	214
1986	50,341	225

At the beginning of the First Five-Year Plan, India had only 5 enterprises with capital employed (net fixed assets plus working capital) of Rs 29 crores. They rose to 225 running public enterprises in 1986 with an investment of Rs 50,341 crores. The contribution of public sector is 25 per cent of the GNP to the country.

Role in Industrialisation. Public enterprises have played an important role in all round industrial development of the Indian economy. They have been successful in controlling the commanding heights of the economy. They have a monopoly in the production of coal, power, lead, lignite, and crude oil. The state has established itself as a market leader in respect of mild steel, fertilisers, oil refining and the distribution of petroleum products. It has entered the field of machine-making in a big way, as in the case of basic metals. It has concentrated attention on machinery manufacture for heavy and capital goods industries like steel, electrical equipment, mining and fertilisers and chemicals. In fields like fertilisers, electronics, aeronautics and machine tools, the public enterprises have made creditable contributions in acquiring industrial technology and encouraging managerial skills. Apart from basic industries, public enterprises cover a number of other areas such as drugs, pharmaceuticals, consumer goods, trading and marketing services, contract and consultancy services, tourist services, financial services, etc. The public sector has also taken over a number of sick enterprises in the private sector mainly to protect employment. Thus the public sector has come to occupy a key position in India's economy. It has been playing a pivotal role in modernising Indian industry and in reducing concentration of economic powers. Above all, it has been successful in its fundamental objective of setting up sound industrial base in the country.

Profits. The gross profits (before interest and tax) of public enterprises amounted to Rs 85 crores in 1968-69 which increased to Rs 5,319 crores in 1985-86 the highest during the decade. In terms of net profit after interest and tax, they incurred losses between 1968-69 to 1971-72. They made a small profit of Rs 18 crores in 1972-73 which gradually touched Rs 184 crores in 1974-75 and 1976-77 but turned into losses in subsequent years. But in 1982-83, the net profits amounted to Rs 614 crores which rose to Rs 1,199 crores in 1985-86.

Return on Capital Employed. The return on capital employed (i.e., the ratio of gross profits to capital employed) increased from 2.8 per cent in 1968-69 to 9.4 per cent in 1976-77 and then stabilised around 7.5 per cent in subsequent years, but increased to 13.0 per cent in 1982-83 and fell slightly to 12.3 per cent in 1985-86.

Generation of Internal Resources. During the Fourth Plan, internal resources generated by public enterprises amounted to Rs 1,260 crores, and Rs 3,439 crores during the Fifth Plan. Internal resources generated by them during the Sixth Plan period (1980-85) amounted to Rs 11,721 crores. The number of enterprises generating internal resources went up from 102 in 1980-81 to 122 in 1984-85. The net internal resources generated by 126 enterprises amounted to Rs 4,218 crores in 1985-86.

Sales. The gross sales of public sector undertakings has been increasing substantially over the years. It increased from Rs 2,393 crores in 1968-69 to Rs 62,221 crores in 1985-86. Sales as percentage of capital employed in respect of manufacturing enterprises has grown from 141 per cent in 1976-77 to 147 per cent in 1985-86 and of service enterprises from 126 per cent to 138 per cent of over the period.

Social Benefits. The social benefits accruing to the people of various regions where these undertakings have been set up are no less impressive. The total number of employees in public sector enterprises increased from 16 lakhs in 1975-76 to 22 lakhs in 1985-86. The average annual per capita emoluments of employees for the year 1975-76 were Rs 8,940 which increased to Rs 26,069 in 1985-86. Moreover, social amenities like modern townships with housing and essential community facilities like schools, hospitals, recreation centres, etc., have been provided for the employees of public sector enterprises. Expenditure on social overheads increased from Rs 95 crores in 1976-77 to Rs 785 crores in 1985-86.

Help to Ancillary Units. One of the objectives of public sector enterprises has been to foster the development of ancillary units. The number of ancillary units registered with public enterprises has been steadily increasing over the last few years, as a result of comprehensive guidelines issued by the Bureau of Public Enterprises in 1978. Consequently, their number rose from 888 in 1979-80 to 1,800 in

1985-86. The value of purchases made from them in 1985-86 was Rs. 451 crores as against Rs 120 crores in 1979-80. Public enterprises also provide a number of facilities to ancillary and feeder units. They are technical know-how, supply of scarce raw materials, and testing of raw materials and finished products.

Foreign Exchange Earnings. A number of public undertakings manufacture products for exports and render services in international trade. Thus they contribute in earning foreign exchange for the country. Foreign exchange earnings from exports increased from Rs 1,753 in 1976-77 to Rs 5,831 crores in 1984-85 which declined to Rs 3,799 crores in 1985-86.

Contribution to the Exchequer. Public enterprises have been contributing substantially to the Exchequer. Their contribution to the Exchequer by way of dividends, corporate taxes, excise duty, customs, etc. increased from Rs 1,376 in 1976-77 to Rs 9,053 crores in 1985-86. As a result of import-substitution efforts, public enterprises saved Rs 118 crores in foreign exchange during 1985-86.

Balanced Regional Development. In order to remove regional disparities and achieve balanced regional development, public enterprises have been located in economically backward regions on a selective basis. Consequently, they serve as effective growth points and help in expansion or employment opportunities and flow of resources.

Redistribution of Income and Wealth. The public enterprises have been instrumental in promoting redistribution of income and wealth through development of backward regions, provision of public utility services at subsidised rates, selling basic inputs at administered prices; and providing medical, educational, housing and other facilities to their employees.

Shortcomings

The working of public undertakings has revealed several defects which have been pointed out from time to time by the Estimates Committee and the Committee on Public Sector Undertakings of the Parliament.

The industries in which the major portion of investment has been made are highly capital-intensive entailing long-gestation periods, like steel, heavy engineering, heavy electricals, heavy machine tools, petroleum, etc. When such giant projects are set up, their capacities are based on certain projections of demand, which, however, do not materialise leading to the problem of under utilisation. In 1985-86, 51 per cent of units had capacity utilisation of more than 75 per cent; 24 per cent between 50-75 per cent; and 25 per cent below 50 per cent.

Several undertakings have taken longer time in production than

originally estimated due to *faulty planning*. In a number of cases, tenders were invited before any project reports. Cases where project reports had been prepared, not much attention was paid to manpower requirements, transport requirements, unit cost analysis, etc. Moreover, very little attention was paid to the time schedule in the construction of the project, because of delays in decision and implementation and lack of coordination, "We are not able to make full use of not only the installed capacity in the units and the projects, but in human resources, in our people's capability and their brain power."

Some of the public enterprises have been incurring *heavy losses* since 1977-78. Even earlier they incurred losses from 1968-69 to 1971-72. Their losses increased from Rs 981 crores in 1982-83 to Rs 1,456 crores in 1985-86. There were 90 units which incurred losses in 1985-86. The main reasons have been inefficient and out-dated technologies particularly in core sectors which have led to inefficient operations and low productivity.

Two complementary objectives of public sector enterprises have been industrial dispersal and backward area development. In fulfilment of these objectives new centres such as Durgapur, Rourkela, Bokaro, Ranchi, and Bhilai were developed. But these centres of massive modern industry have failed to develop the surrounding backward areas in their proximity. Even the setting up of private sector industries at such centres has met with little success in fulfilling these objectives.

A number of undertakings have been established without assessing profitability and economic benefits. Some of them are located not on purely economic but political considerations without any regard to the proximity to sources of raw materials.

One of the main hurdles in the operational efficiency of public enterprises has been the *lack of management autonomy* or commercial culture. No doubt public corporations are accountable to Parliament, but continuous intervention by various government departments and politicians even in day-to-day operating matters adversely affects their performance. "This is supplemented by intervention from Parliament in the form of questions and criticism by MPs which often deal with trivialities and where the victims have no right to reply. Enquiries by estimates and other committee seldom deal with strategic issues, and concentrate on peripheral matters such as corporate entertainment, foreign travel etc."¹

One of the serious defects of public enterprises in India has been their *inefficient management*. They are manned by civil servants who are not

¹M.S. Patwardhan, "Economic Growth: Role of Public, Private Sectors", *The Economic Times*, 27 March 1981, Italics mine.

conservant with the actual working of industrial enterprises and lack of specialised training for complex industrial jobs. Delivering the TTK Memorial Lecture on the "Management of Industrial Change" on 7 March 1983 Dr Manmohan Singh, the Governor of RBI, pointed out that the directors in some public sector units "do not possess adequate experience and expertise to exercise their functions effectively." Again, on account of the structure of salaries and perks obtaining in public enterprises, it has not been possible to attract and retain the best of professional personnel. The remunerations of top level executives in such enterprises are even lower than the reduced remunerations of private sector enterprises. Moreover, there are frequent changes and transfers at the top level. Often many senior positions remain unfilled for long. All these factors adversely affect decision-making in public undertakings and hence their operational efficiency.

The cost structure of public enterprises has been very heavy. "In respect of many, if not most, of public sector enterprises, it has been the experience that construction periods were much longer than originally projected. Some of this delay has arisen from such elementary facts as inadequate project preparation or unrealistic assumption about supply lags. More frequently, there have been changes in the size or design of the project at various stages of its construction. Whatever the cause, the result often is cost over-run together with loss of production for several months in the initial period. Further, because of the desire to locate large-sized industrial project in hitherto backward areas, both the cost and execution of the project depends heavily on the creation of adequate infrastructure facilities. There have also been delays because of the interlinking of projects—steel plants with heavy engineering plants, or with coal mines or with railway facilities, electricity generation with the manufacture of electrical machinery, cables, transmission towers and so on by other public sector units, etc. It obviously enhances the transmission of delays and high cost in one unit to the other. Over and beyond all these, the construction of various facilities required for whole township to house the employees have to be provided. Once the unit starts operating, cost increase have occurred because of inadequate utilisation of capacity, inefficient inventory management, absence of adequate purchase or selling arrangements."²

Pricing policies of the public sector enterprises have not been based on rational considerations. In certain cases, there has been underpricing of products which has tended to benefit the private sector using those products. In the majority of the cases there are administered prices and

subsidised prices. There is also the scheme of price preference for public sector units in the matter of government purchases which is an indirect means of subsidising their losses. Though almost all enterprises in the public sector accept the need to realise a minimum rate of return on investments, yet they have failed to achieve the desired rate due to defective pricing. "The deficiencies in the system of pricing of public sector products have had the obvious effect of enlarging the burden on the budgets of the Central and State Governments. Progressively, some of these burdens have been transferred to the long-term financing institutions. and banks. Even with their support it is becoming increasingly difficult for many units in the public sector to provide adequately for maintenance and enlargement of capacity."³

Measures for Improvement

On the recommendations of the Sengupta Committee, the Government have adopted a number of measures for improving the performance of Central public enterprises. It has given increased financial powers to the enterprises for incurring capital expenditure. The Board level executives have been given a tenure of 5 years, and managerial personnel have been allowed lien for 3 years if they join other public enterprises. The number of Government directors on the Boards of public enterprises have been reduced in order to reduce the Government interference to the minimum. More emphasis has been given for training of managerial personnel. "An added thrust has been given to productivity increases, cost control, cost reduction and value engineering. A series of other steps such as provision of captive power facilities wherever found necessary, technology upgradation, modernisation, product diversification, introduction of improved maintainence practices, etc. have also been taken to upgrade the performance of public enterprise."⁴.

³Ibid.

⁴GOI, Bureau of Public Enterprises, *Public Enterprises Survey 1985-86*, Vol. 1, 1987.

Chapter 79

INFLATIONARY TRENDS IN INDIAN ECONOMY

INTRODUCTION

Indian economy has been experiencing occasionally mild and often severe inflationary trends since June 1955. This chapter analyses the behaviour of prices during the five-year plans and the causes responsible for inflationary rise in prices.

PRICE BEHAVIOUR UNDER THE PLANS

The First Five-Year Plan (1951-56) was launched with the avowed objective of combating inflation following the Second World War and the Partition of the country. It succeeded in achieving this objective through favourable monsoons, world factors and Government measures. Production of foodgrains rose by 20 per cent, of cotton by 45 per cent, and of oil seeds by 8 per cent. The index number of agricultural production for all crops by 21 points and that of industrial production by 18.4 points. Money supply increased by 13 per cent, while deficit financing was of the order of Rs 333 crores. The increase in money supply was in keeping with the requirements of an expanding economy which absorbed this amount without generating any inflationary pressure. bumper crops, the disinflationary fiscal and monetary measures and the end to the Korean war helped to neutralise the effects of deficit financing. As a result, the index of wholesale prices fell by 22 per cent, of food articles by 25.9 per cent, of manufactures by 3.6 per cent, and of industrial raw materials by 31.9 per cent.

The Second Plan (1956-61) was much bigger than the First Plan. The total outlay was to the tune of Rs 7,600 crores comprising of Rs 4,600 crores in the public sector and Rs 3,000 crores in the private sector. Deficit financing was 20 per cent (Rs 954 crores) of the public sector outlay of Rs 4,672 crores. The increase in money supply was 31 per cent but the growth in real national income was 22 per cent. Heavy investment, deficit financing, increase in money supply but slow growth of national income, failure of agricultural crops and difficulty in importing capital and raw materials due to deficit in balance of payments were the principal causes responsible for an all round rise in

prices. Consequently, the general index of wholesale prices rose by 31 per cent, of food articles by 27 per cent, of industrial raw materials by 45 per cent, and manufactures by 25 per cent.

The Third Plan (1961-66) witnessed steep rise in prices, especially of food articles. Food articles rose by over 45 per cent, industrial raw materials by 32 per cent, manufactures by 20 per cent and all commodities by 30 per cent. The rise in defence expenditure due to the War with China in 1962 and with Pakistan in 1965, the substantial increase in public and private outlay, a high dose of deficit financing and increase in money supply were mainly responsible for the inflationary pressures during the Plan. Deficit financing was 13.2 per cent (Rs 1,133 crores) of the total outlay of Rs 8,577 crores but the increase in money supply was 48 per cent. These factors coupled with the slump in agricultural production in 1965-66, actually caused a near 6 per cent fall in the real national income in the last year of the Plan. Besides, there was a considerable increase both in coverage and in the rates of Union excise duties and general sales tax. These had the effect of pushing up the prices. Difficulties of foreign exchange further worsened the situation as industrial raw materials could not be imported in required quantities. Transport bottlenecks and labour unrest failed to bring about substantial increase in industrial production. Many industries suffered from idle capacity to the extent of 50 per cent. Maldistribution and faulty system of controls of essential commodities gave a further fillip to the already worsened situation. Hoarders, intermediaries and blackmarketeers created scarcities in foodgrains and consumer goods.

Annual Plans (1967-69). During the first two annual Plans 1966-67 and 1967-68 the wholesale prices rose by 14 per cent and 11.6 per cent respectively. The substantial rise in prices was due to the persistent imbalance in the economy arising from supply shortages on the one hand and increase in monetary demand on the other. It was also to some extent due to higher costs of imported raw materials and foodgrains consequent on the devaluation of the rupee in June 1966. The price-wage-cost spiral prompted manufacturers of certain essential commodities to raise prices with the consent of the Government. However, prices became relatively stable during the *Third Annual Plan* (1968-69) due to a bumper harvest. The general price level fell by 1 per cent.

Fourth Plan (1969-74). In the beginning of the Fourth Plan, the price rise was modest being 3.8 per cent in the first year of the plan but gathered momentum with every year reaching 20.2 per cent in the last year. The overall increase in the wholesale price index was 45 per cent during the Plan period. The factors responsible for the price rise were varied and many. Deficit financing was 12.7 per cent (Rs 2,060 crores)

of the total Plan outlay. Money supply increased by more than 64 per cent whereas the growth rate of real national income was about 17 per cent during the five years. Heavy taxation, influx of refugees from East Pakistan, the Indo-Pak War of December 1971, the failure of crops in 1972-73 and 1974-75, the increase in the price of crude oil by OPEC by four times in 1973, and the worldwide inflationary trends pushed up the prices of domestic and imported goods. Besides the shortfall in cereals, fibres, pulses and oil seeds, the growth of industrial production had been particularly unsatisfactory. Certain elements of the cost-push type had also been in operation. Speculative activities seeking to exploit emerging shortages had played their part in several segments of the price line.

Fifth Plan (1974-79). The five years of the Fourth Plan witnessed a staggering increase in prices by 25.2 per cent. This was due to the continued sluggishness of agricultural production, disproportionate expansion of money supply and heavy doses of deficit financing in the two previous years as well as in 1974-75. There was also a large increase in prices of various petroleum products and fertilisers in the beginning of 1974. Inflationary trends in the world markets led to sharp increase in prices of a large number of imported products of basic importance to the economy, thereby giving further stimulus to the already operating strong inflationary pressures within the economy.

To check these inflationary trends, the Government adopted a number of fiscal and monetary measures to mop up savings and reduce the growth of money supply. It also intensified its operations against smugglers, hoarders and black marketeers. The use of MISA immobilised a part of black money. All these measures, coupled with an excellent crop in 1975-76, provided a remarkable brake on the spiralling prices which resulted in a decline of 1.1 per cent in the price level. Thereafter, during the period of Emergency until 1978-79, there was a reasonable degree of price stability, the price rise being 2.1, 5.2, and 0.1 per cent for the years 1976-77, 1977-78, and 1978-79.

Sixth Plan (1980-85) The behaviour of prices in the first three years of the Sixth Plan was encouraging. It showed a declining trend in the rate of inflation. The growth in the wholesale price index which was 18.2 per cent in 1980-81 which came down to 9.3 per cent in 1981-82 to 2.5 per cent in 1982-83. But the rate of price rise was 9.3 in 1983-84. During this year, a variety of administered prices were hiked. The hike in administered prices imparted an upward push to the price level. Still the price situation appeared to be normal in the Sixth Plan. The annual inflation rate on a point to point basis was 8 per cent in terms of wholesale price index and 9.5 per cent in terms of consumer price index. The reasons were an average growth rate of money supply (M_3) of 16

per cent and the annual average growth rate of 5 per cent during the Plan period.

Causes of Inflationary Rise in Prices

Economists differ over the causes that lead to inflationary rise in prices. There are the quantity theorists or monetarists who explain inflation due to *demand pull* or excess demand often described as "too much money chasing too few goods." According to them, inflation is the result of excessive increase in the money supply in the face of an inelastic supply of goods and services. Other economists ascribe inflation to *cost-push* factors. Cost-push inflation is caused by wage-push and profit-push to prices. The basic cause of wage push inflation is the rise in money wages more rapidly than the productivity of labour. It is further aggravated by upward adjustment of wages to compensate for the rise in the cost of living index. The grant of additional D.A. with the increase in the cost of living index by 8 points in India is an example of wage-push inflation. Again, a few sectors of the economy may be affected by money-wage increases and the prices of their products may start rising, in case their products are used as inputs for the production of commodities in other sectors. As a result, production costs of other sectors will rise, and thus push up the prices of their products. Thus wage-push inflation in a few sectors of the economy may lead to inflationary rise in prices in the entire economy. Further, an increase in the domestically produced or imported raw materials may lead to cost-push inflation, as these raw materials enter into the cost of production of finished products. Another cause of cost-push inflation is *profit-push* inflation. Oligopolistic and monopolistic firms, raise the prices of their products to offset the rise in labour and production costs so as to earn higher profits. There being imperfect competition in the case of such firms, they are able to "administer prices" of their products. In an economy in which administered prices exist, there is at least the possibility that these prices may be administered upward faster than costs in an attempt to earn greater profits. This leads to profit-push inflation.

The structuralist school of Latin America stresses structural rigidities in a developing economy as the principal cause of inflation. According to this view, *structural inflation*, is caused by two basic rigidities. First, the rate of export growth in a developing economy is slow and unstable which is inadequate to support the required growth rate of the economy. The sluggish growth rate of export necessitates a continuous policy of import substitution which, in turn, leads to a cost-push because of the high prices of imported materials and equipment. The secular deterioration in the terms of trade of primary products of developing countries

further limits the growth of the income from exports which often leads to exchange rate devaluation. Second, agricultural production is inelastic in such economies due to defective system of land tenure and other rigidities in the form of lack of irrigation, finance, marketing and other facilities. Thus structural inflation may result from cost of import substitution, rise in agricultural prices deterioration in the terms of trade, and exchange rate devaluation. These factors add to cost-push inflation.¹

But it is not correct to argue that inflationary rise in prices in India has been due to either demand pull or cost-push or structural factors. In fact, the actual inflationary process contains some elements of three principal causes affecting demand and supply forces. We examine the factors lying behind demand and supply in the light of the Indian economy.

Demand Side

The following factors have been responsible for increasing the demand for goods and services in relation to their supply in the Indian economy, thereby leading to inflationary rise in prices

1. **Increase in Population and Urbanisation.** There has been a record growth of population by 324 million during 1951-81. Over the same period urban population increased by 94 million. There has also been a rapid increase in the number of towns of all categories. The number of Class I towns increased from 74 to 216, Class II town from 95 to 270, Class III towns from 330 to 739, and Class IV towns from 621 to 1048. Natural increase in population, industrialisation, and migration from rural areas leading to urbanisation has led to increase in the demand for food and other consumer goods and services like medical, educational, water, transport and other facilities alongwith rising money incomes.

2. **Increase in Government Expenditure.** Since 1950-51 when India started on the road to planned economic development, expenditure of the Centre, State Governments and Union territories has been steadily increasing. From a mere Rs 744 crores in 1950-51, the total expenditure of the Centre, State Governments and Union territories had risen to Rs 73,215 crores in 1984-85. During the successive five-year plans, huge investments have been made on the development of agriculture, industry, power, irrigation, transport, communications, etc not only by the Government but also by the private sector, thereby creating demand for goods and services. Expenditure on such items has a long-gestation period and fails to increase the supplies of goods and services in the

¹For a detailed analysis of the different types of inflation, refer to the author's *Macroeconomic Theory*, 1986.

short-run. Thus they add to inflation. Not only this, there has been a phenomenal increase in the non-development expenditure in the form of defence, interest on public debt, administrative expenditure, subsidies, etc. Such expenditure increases incomes and demand for goods and services but does not add to the supply of consumer goods, thereby giving a fillip to inflation.

3. Increase in Money Supply. Another important factor on the demand side has been the rapid increase in money supply with the public (M_1) which consists of notes and coins and deposits with banks. The increase in money supply is essential to meet the growing demand of a developing economy which is being structurally transformed by the development process. So long as the growth rate of the economy is high enough to absorb the increase in money supply, there is no inflationary rise in prices. But in India the increase in money supply has been much higher than the growth rate of the economy. On the average, money supply has increased by 14 per cent per annum, the economy at the rate of 3.5 per cent and consequently the price level at 10.5 per cent in India.

4. Deficit Financing. Deficit financing has been one of the major factors in increasing the money supply, thereby contributing to inflationary trends in the Indian economy. With every five-year Plan, the amount of deficit finance has been on the increase. It was Rs 333 crores in the First Plan, Rs 948 crores in the Second Plan, Rs 1,133 crores in the Third Plan, Rs 2,060 crores in the Fourth Plan, and Rs 3,590 crores in the Fifth Plan. During the Sixth Plan, the budgetary deficits amounted to Rs 16,331 crores. Such huge deficits have been used to finance development and non-development expenditure, thereby increasing the money supply, and have led to inflationary rise in prices.

5. Effect of Black Money. In India, there is a parallel economy supported by black money. Black money is unaccounted money in the hands of tax evaders, speculators, smugglers, hoarders, black marketeers, etc. Due to persistent rise in prices, traders and businessmen create artificial scarcities by hoarding essential commodities and indulging in speculation in order to profit more. Such unaccounted money is spent on luxury goods, real estate, gold, jewellery, etc. and leads to conspicuous consumption, thereby adding to further rise in prices.

Supply Side

On the supply side, there have been a number of factors responsible for scarcity of agricultural and industrial products and those leading to rise in costs of commodities, and consequently to rise in prices.

1. Erratic Agricultural Production. In India, there are substantial year

to year variations in agricultural production caused by exogenous forces like droughts, floods, etc. For instance, the index number of all agricultural commodities was 102.7 in 1960-61 which fell to 95.8 per cent in 1965-66, rose to 112.9 in 1970-71 and to 127.2 in 1975-76, then fell to 115.7 in 1976-77, rose to 139.3 in 1978-79 and again fell to 114.8 in 1979-80, and rose 140.5 in 1981-82 and fell to 137.5 in 1982-83 and rose to 155 in 1984-85. Such wide fluctuations in agricultural production are one of the major factors in the inflationary rise in prices of foodgrains and other agricultural commodities. Moreover, there has been stagnation or nominal increase in the production of several crops like jowar, bajra, and pulses among foodgrains, groundnut and sesamum among oilseeds, and jute. For instance, the annual growth rate calculated on the basis of triennial averages of production for 1949-50 to 1951-52 and 1978-79 to 1980-81 for jowar and bajra comes to 2.3 per cent, of pulses 0.8 per cent, of groundnut 1.8 per cent, of sesamum (—) 0.1 per cent and jute 0.2 per cent. Consequently, the prices of these products have tended to increase manifold.

2 Hoarding and Speculation. Taking advantage of the erratic supply of agricultural commodities, traders hoard essential commodities like wheat, rice, oil-seeds, sugar, etc and also indulge in speculation in anticipation of the future rise in their prices. A commodity may be scarce in the open market but is available in sufficient quantities at a very high price in the black market.

3 Sluggish Industrial Production. Sluggish production of industrial goods has also been an important factor in creating scarcities and thereby arising the prices of products. During the initial 14 years (1951-65) of our planning, the industrial growth rate was about 8 per cent. But it slowed down to 4 per cent during 1965-79 and fell to (—) 1.4 per cent in 1979-80. It picked up to 4 per cent in 1980-81 and further to 8.6 per cent in 1981-82. But again fell to 3.9 per cent in 1982-83 and rose to 5.8 per cent in 1984-85. Taking the use-based classification, there has been substantial decline from year to year in the growth rate of capital goods, basic, intermediate and consumer goods industries. Factors responsible for this have been: (a) the wars of 1965 and 1971 which diverted potential productive investment into unproductive uses, (b) the successive droughts of 1965-67, 1971-73, 1979-80 and 1982-83 which restricted the supply of agricultural raw materials; (c) supply constraints in the form of infrastructural bottlenecks like power, transport, etc. (d) deceleration in the growth rate of public sector investment in real terms; (e) constraints on private investment in the form of licensing, exchange, taxation and credit policies, etc.; and (f) low utilisation to the extent of 52 per cent in certain industries. These factors have helped in raising the prices of industry.

4. Increase in Commodity Taxes. Increase in commodity taxes in every budget tend to raise the prices of products by more than the amount of the tax. For instance, Central excise duties are levied on about 150 items and the rates of duty are enhanced almost every year. Consequently, the revenue from Union excise duties alone increased from Rs 155 crores in 1950-51 to Rs 11,167 crores in 1984-85 (R.E.). There are also important duties on a variety of consumer, intermediate and capital goods which also raise their prices. Besides, the State Governments levy sales tax, state excise duty and octroi duty which further tend to raise the prices of commodities. Thus the variety of commodity taxes have been instrumental in increasing inflationary pressures within the Indian economy.

5. Raising of Administered Prices and Freights. An other factor responsible for the cost-push inflation has been the raising of administered prices of a number of commodities from time to time and of railway freights in the railway budget almost every year. The Government has been revising upwards the administered prices of levy (controlled) cement, levy sugar, petroleum products, pig iron, iron and steel items, coal, paper, drugs, etc. By and large the output of the public sector constitutes an input of the private sector. So an increase in the administered prices of public sector output raises costs and imparts an upward push to the price level all-round. Coupled with the increase in railway freights, administered prices have stoked the fire of inflation.

6. Rise in Import Prices. Global inflation and hike in oil prices in 1974 and 1979 have raised the prices of our imports thereby giving a further fillip to inflationary pressures within the economy. The prices of such vital imports as capital goods, cereals, chemicals, edible oils, fertilisers, petroleum products, etc. have been rising since the 1970s in the world markets. These have naturally helped in raising the price level in the country.

Thus forces operating both on the demand and supply side have been responsible for the inflationary trends in the Indian economy.

Government Policy to Control Prices

The Government's price policy has been to stabilise prices. For this, it has been adopting various monetary, fiscal and other measures to check demand and raise supplies of commodities.

1. Monetary Measures. The Reserve Bank of India (RBI) has been following the policy of controlled monetary expansion. It is guided by the twin objectives of avoiding excess build up of liquidity at a time when inflationary pressures re-emerge in the economy and regulating the flow of credit to stimulate and sustain production. To contain inflationary pressures, the RBI raises the Cash Reserve Ratio (CRR) in

several stages. At the same time care is taken to ensure that the supply of credit does not become a constraint for expanding productive activity and selected areas are stimulated by greater availability of credit. For instance, under the selective credit control policy which came into force on 1 April 1985, the maximum lending rate was brought down from 18 to 17.5 per cent. Lending rates in the highest bracket which had increased by as much as 4.5 percentage points since September 1979 were subjected to a somewhat larger reduction than the rates for other categories. Interest rates on short-term loans in respect of agriculture, small scale industry, exports and State level corporations assisting artisans, village and cottage industries and State sponsored Scheduled Castes/Scheduled Tribes Development Corporations were reduced, the reduction ranging from 0.25 percentage points to 1.0 percentage point.

To control excess liquidity in the banking system, the CRR was raised from 7 per cent to 8.5 per cent in three stages of half per cent each with effect from May, July and August 1983.

In view of the continued excess liquidity in the banking system, in addition to the 10 per cent incremental cash reserve ratio, the normal cash reserve ratio of 8.5 per cent was further raised to 9 per cent with effect from February 1984.

Under the selective credit control policy, some adjustments have also been made from time to time to strengthen the redistributive effect of credit policy. These include reduction in interest on advances for fertiliser, retail trade, procurement of pulses and oilseeds, for farmers, professionals and self-employed belonging to Scheduled Castes/Tribes, and professional and self-employed women.

In brief, the monetary and credit policy of the RBI is governed by the twin objectives of supporting economic expansion, especially in selected industries facing a demand constraint, while at the same time exercising due caution with regard to the rate of monetary expansion.

2. Fiscal Measures. The Government adopts a number of fiscal measures to stimulate production of various commodities on the one hand, and curtail expenditure to discourage demand on the other hand. To provide fiscal support to the production of durable consumer goods, the Government announces relief in Union excise duties from time to time in its annual budgets. Concessions in import duties are allowed in the case of certain inputs, components, and specified machinery. Similar concessions in import duties are given in respect of raw materials, components and machinery for the manufacture of import substitute goods.

In January 1984, Government introduced a package of measures aimed at strengthening fiscal discipline, including *inter alia*, curbs on expenditure, and a temporary ban on fresh Government recruitment.

Central Ministries and other agencies have been asked to cut non-plan expenditure by 3 per cent of the approved amount and the approved plan outlay by 5 per cent. Further financial allocations for financial losses of the public sector enterprises are not allowed.

3. Physical Measures. The aim of physical measures is to ensure proper allocation of scarce resources for the purpose of price stabilisation. In India, physical measures include controlling the prices of certain essential commodities, fixation of prices of agricultural products, and distribution of essential commodities through the public distribution system.

(a) *Control Over Prices.* Earlier, the prices of essential commodities like foodgrains, sugar, paper, cement, vegetable oil, etc. were controlled. But as the supply situation eased some of the essential commodities were decontrolled or partially controlled. At present, the Government has been following a policy of dual prices in the case of sugar, paper, cloth, cement, etc. The aim is to supply such essential commodities at controlled prices and in fixed quantities to the weaker sections and others are allowed to purchase them at higher prices in the open market in unlimited quantities.

(b) *Fixation of Prices of Agricultural Products.* The price policy for agricultural products is guided by the objectives of providing remunerative prices to the producers to facilitate procurement and to eliminate hoarding and speculation. Under this policy, the Central and State Governments make upward revisions in the support/procurement prices of major agricultural commodities like wheat, paddy, pulses, oil seeds, cotton, sugarcane, jute, coarse grains, etc. Price revisions are made on the recommendations of the Agricultural Prices Commission which has been redesignated as Commission for Agricultural Costs and Prices.

(c) *Public Distribution System.* The Public Distribution System (PDS) aims at supplying selected essential commodities like cereals, sugar, edible oils, kerosene oil, soft coke and controlled cloth to the low income groups of the society at fixed prices and in fixed quantities. The PDS functions through a national network of fair price shops. There were 3.22 lakh fair price shops on 1 October 1985. Besides, the PDS, the State Governments also procure and supply pulses, vanaspati, toilet soaps, cycle tyre and tubes, battery cells, salt and tea to consumers at fixed prices through authorised retail outlets including consumer cooperative societies and super bazars. Moreover, institutions like the National Agricultural Cooperative Consumer Federation (NAFED) and National Cooperative Consumer Federation (NCCF) have been playing an important role in the distribution of certain essential commodities like pulses, eggs, onions and potatoes at fixed prices in different parts of the country.

4. Increase in Supply. Another important plank of the Government's price policy has been towards increasing the supplies of agricultural and industrial products through increased production, building buffer stock and importing essential commodities. Efforts are being made to increase production of foodgrains, cash and horticulture crops: (i) by spreading high-yielding varieties of inputs such as quality seeds, subsidised fertilisers, etc. (ii) through the extension of irrigation and water management programmes; (iii) by promoting agricultural research, education and extension; (iv) by institutional and organisational arrangements to assist small and marginal farmers; and (v) by diversification of allied agricultural activities such as animal husbandry, dairy, fisheries, etc.

Government has been taking action in several directions to stimulate investment and facilitate increased production of essential consumer goods in the industrial sector. The important measures have been towards import duty reduction on machinery, assistance for modernisation, reduction in excise duties, liberalisation of rules regarding capacity creation, liberal imports of components and industrial raw materials, encouragement to import substitution industries through foreign collaboration, etc.

Above all, to augment the supplies of essential food products like foodgrains, sugar, etc., during periods of scarcity, the Government has been following the policy of building buffer stocks. Besides, it imports foodgrains and edible oils in large quantities in order to meet the domestic demand for them.

Thus the Government has been giving high priority to price control policies which aim at increasing supplies and restraining the growth of aggregate demand through monetary, fiscal, physical and other measures.¹

¹For suggestions refer to Micro-aspects of price policy in a developing economy relating to agriculture, consumer goods, industrial raw materials, enterprises, and wages in Chapter 42.

Chapter 80

FOREIGN TRADE AND BALANCE OF PAYMENTS IN INDIA

INTRODUCTION

The role of foreign trade in economic development was discussed in Part Five of the book.¹ The present chapter examines the role of foreign trade in India's economic development since the beginning of the planning era. More than three decades have passed since India started on the path of planned economic development in 1950-51. During this period, important changes have taken place in the volume, composition and direction of its foreign trade. These features of India's trade are discussed below.

VOLUME OF TRADE

The size or magnitude of India's foreign trade of the total value of imports and exports has been rising considerably since 1950-51, shown in Table 80.1. For the period 1950-51 to 1960-61, India's total value of foreign trade rose by 43.9 per cent, during 1960-61 to 1969-70 it rose by 66.4 per cent, and by 388.5 per cent during 1970-71 to 1979-80. Taking the period 1950-51 to 1984-85, the total value of India's foreign trade increased by about 23 times. In absolute terms, it rose from a mere Rs 1,251 crores in 1950-51 to a very high figure of Rs 28,881 crores in 1984-85.

Imports. During 1950s, the increase in the value of trade was slow. Exports were almost stationary and were confined to traditional items of primary goods. But imports increased by 75.4 per cent over the period 1950-51 to 1960-61 because of increasing imports of foodgrains, raw materials and capital equipment and machinery. The emphasis on heavy industries during the Second Plan necessitated the imports of machinery and capital equipment which increased the total value of imports. The emphasis on heavy industries was continued during the Third Plan and the Three Annual Plans which led to increased imports of machinery and equipment. Bad weather conditions also led to large imports of agricultural raw materials and foodgrains. Coupled with

¹Chapter 47.

these factors, the Devaluation of the Indian Rupee in June 1966 further raised the value of imports. Consequently, the value of imports rose by 38.8 per cent over the period 1960-61 to 1969-70.

During 1970s, imports rose at a faster rate than exports. Imports increased by 668.7 per cent in 1980-81 over 1970-71 while exports increased by 335 per cent in value terms. The large increase in the value of imports occurred in the case of petroleum and petroleum products due to the increase in their prices by OPEC countries, first in 1973-74 and then in 1979 and 1980. Besides, the inflationary trends in the world also helped in increasing the prices of other imports. In 1980-81 the value of imports rose by 37 per cent. One of the principal items which led to such a high increase was imports of petroleum and petroleum products whose value rose by 58 per cent in 1980-81 over the previous year. With the increase in the domestic production of crude oil India's share of POL in overall imports fell from 42 per cent in 1980-81 to 31.5 per cent in 1984-85. During the Sixth Plan, imports grew at an annual rate of 13.3 per cent.

TABLE 80.1. INDIA'S FOREIGN TRADE
(Rs Crores)

Year (1)	Imports (2)	Exports (3)	Total (4)	Balance of trade (5) = (2)-(3)
1950-51	650	601	1251	-49
1955-56	774	609	1383	-165
1960-61	1140	660	1800	-460
1965-66	1409	806	2215	-603
1969-70	1582	1411	2993	-169
1970-71	1634	1535	3169	-99
1974-75	4519	3329	7848	-1150
1978-79	6814	5726	12540	-1068
1979-80	9143	6415	15561	-2725
1980-81	12549	6711	19260	-5634
1984-85	17134	11744	28878	-5390

Source D G C I & S., *Monthly Statistics of Foreign Trade*.
Notes 1950-51 to 1965-66 Pre-devaluation rates and thereafter Post-devaluation rates.

But the increase in the value of imports over the years does not give a true picture of the causes behind their increase. The quantity index and the unit value index show that India's ~~volume~~ of imports have not increased much as against their ~~unit~~ value. The quantity index (1978-79=100) of imports increased from 67 in 1970-71 to 105 in 1983-84, a rise of 176 per cent over the period. On the other hand, the unit value

index rose by 250 per cent over the same period. This shows that India is being squeezed for her imports by the developed and oil-rich countries through the rise in the prices of their export commodities.

Exports. Over a period of thirty years (1950-51 to 1984-85) India's exports increased by more than 19 times. During the First and Second Plans exports remained almost stagnant around Rs 600 crores on the average. The adoption of various export promotion measures during the Third Plan broke the stagnation spell and exports showed an upward trend, being Rs 1,269 crores in 1965-66 at post-devaluation rates. After the devaluation of June 1966, exports of iron ore, leather and leather manufactures, cashew, kernels, engineering goods, iron and steel, chemicals and allied products, etc. received a further boost. In 1969-70 exports had risen to Rs 1,413 crores, so that they had increased by 96 per cent over the 1960s at post-devaluation rates. The annual average growth rate of exports for the period 1960-70 comes to 3.6 per cent which cannot be termed as satisfactory.

It was, however, in the 1970s that the rate of growth of exports increased considerably. During 1970-71 and 1971-72, exports increased by 8.6 per cent and 4.8 per cent respectively. Then for the next five years ending 1976-77, the increase in exports was spectacular. Exports recorded a growth rate of 23 per cent in 1972-73, 28 per cent in 1973-74, 32 per cent in 1974-75, 22 per cent in 1975-76 and 27 per cent in 1976-77. Thereafter, the growth rate slumped to just 5 per cent in 1977-78, 6 per cent in 1978-79, moved up to 12 per cent in 1979-80 and again fell to 4.6 per cent in 1980-81. The Sixth Plan achieved an annual growth rate in exports of 12.5 per cent.

The main reasons for the high-growth rate of India's exports between 1972-73 and 1976-77 were: (a) the increase in the unit value index of exports from 108 in 1971-72 to 210 in 1976-77; (b) the increase in the quantum index of exports from 107 in 1971-72 to 174 in 1976-77; (c) new markets for India's exports in oil producing countries with the boom in oil prices; (d) increase in the competitive capacity of Indian exports with the rise in world prices of all commodities; (e) link with pound upto 1975 let to virtual devaluation of the rupee; (f) recession in domestic industries; (g) boom in the value of agro-based exports, such as oil cakes, marine products and sugar; and (h) increase in project exports to the Middle East countries.

The sluggishness of exports for the period 1977-78 to 1984-85 had been due to a combination of domestic supply constraints and adverse external circumstances. Some of these were: (a) decline in the quantum index of exports from 174 in 1976-77 to 168 in 1977-78 and thereafter a slow rise and then a decline in 1980-81; (b) almost constant unit value index for the three years reflecting a decline in the unit value of some of

the exports; (c) domestic problems such as labour strikes, power shortages, transport bottlenecks, etc.; (d) decline in demand for Indian exports abroad; (e) adoption of protective measures by developed countries; (f) Government of India's policy of restricting the exports of consumer goods needed within the country; and (g) fall in the value of dollar reduced the value of Indian exports.

In order to determine the contribution of India's exports to the development of the economy a number of indicators are taken into account. The first is India's share in world exports. The country's share has gone down from 2.2 per cent in 1950 to 1.2 per cent in 1960 to 0.7 per cent in 1970 and to 0.46 per cent in 1983. Another indicator is the share of exports as a percentage of GNP which fell from 6.3 per cent in 1950 to 4.2 per cent in 1970. But it started looking up and was 9.8 per cent in 1984-85.

The precentage of imports financed by exports also determines a country's export position. In India, it was 90 per cent in 1950-51 which went down to 61 per cent in the Third Plan, rose to 94 per cent in 1970-71 and further to 106 per cent in 1972-73, but fell to 70.2 per cent in 1979-80, to 53.5 per cent in 1980-81 and to 68.6 per cent in 1984-85. The decline from 1980-81 is due to a very large increase in imports against exports.

The reasons for the sluggish growth in Indian exports are domestic supply constraints, the lure of the highly profitable domestic market which does not encourage exports, unfavourable world environment for exports, and increase in protectionism accompanied by quotas, cumbersome quality control, countervailing duties, etc. by the developed countries.

COMPOSITION OF TRADE

Mere increase in the value of imports and exports of a country is not an indicator of the level of economic development of a country. It is the composition of trade that is more important. The types of goods produced and exported by a country reveal whether a country is industrialised or backward. The changes occurring in the composition of trade over the years also show the economic transformation of a country.

Imports. During the period of the First Five-Year Plan, India's imports consisted mainly of foodgrains, raw jute and cotton, in which transport equipment, iron and steel, petroleum and petroleum products etc. in small quantities having total value of imports 1,100 crores.

It was the adoption of the objectives of rapid industrialisation with particular emphasis on the development of heavy industries.

the Second Plan that the composition of imports started changing. Along with this, the policy of establishing import-substitution industries also changed the nature of imports. There are about 300 import commodities which have been completely substituted by domestic production. Some of them are machine tools, sugar mill machinery, cement machinery, railway wagons, commercial vehicles, cars, jeeps, land rovers, motor cycles and scooters, bicycles, sewing machines, electric fans, electric lamps, refrigerators, automobile tyres and tubes, aluminium, soda ash, caustic soda, ammonium sulphate, etc.

In the field of consumer goods, India primarily imports cereals and cereal preparations. In 1950-51, the imports of foodgrains were 15.3 per cent of the total imports, 16 per cent in 1960-61, 16.5 per cent in 1969-70, and 17 per cent in 1974-75. So they ranged between 15 to 17 per cent of India's imports in normal years. But in periods of bad harvests, they were higher, as in 1965-66 when they accounted for 23 per cent. On the other hand, during periods of good harvests they declined to 13 per cent in 1970-71, even to 0.8 per cent in 1980-81 and to one per cent in 1984-85. Though the production of cereals has increased much over the years, India is still required to import them in order to maintain buffer stocks to tide over unexpected crop failures, as was the case in 1983-84 when they increased by 116.6 per cent in 1983-84 over 1982-83.

The imports of raw materials and intermediate manufacturers have been on the increase with development. This shows that the country is diversifying in the industrial sphere thereby necessitating increasing imports of such commodities as fibres, petroleum oil and lubricants, fertilizers and chemical products, iron and steel, non-ferrous metals, etc.

Fibres include raw jute, raw cotton, raw wool and synthetic and regenerated fibres (man-made). In 1950-51, India imported only raw jute and raw cotton to the extent of 5.8 per cent of the total imports. In subsequent years in the 1960s, she became self-sufficient in jute production. Woollen hosiery industry also developed along with man-made fibre industry. The production of raw cotton has also increased manifold. Still the dependence on harvests continues in this case. Consequently, the imports of fibres vary with the production of raw cotton. For instance, the imports of raw cotton in 1977-78 were to the tune of Rs. 199 crores and in 1982-83 only worth Rs. 0.1 crore.

The largest increase in the value of imports has occurred in petroleum oil and lubricants (POL). In 1950-51, the value of POL was Rs. 54.3 crores which rose to Rs. 190 crores in 1960-61 to Rs. 108 crores in 1965-66 to Rs. 138 crores in 1969-70 to Rs. 5,266 crores in 1980-81 and to Rs. 5,409 crores in 1984-85. The increase in the prices of POL in 1973-74 and again in 1980-81 considerably raised the value of their

imports so that they formed 25.6 per cent of the total import bill in 1974-75 and 42 per cent in 1980-81. In 1984-85, their share was 31.5 per cent. This reflects growth in domestic demand despite rise in indigenous production of crude oil. Imports of fertilizers have shown considerable fluctuations during the past few years depending on good and bad harvests. In 1981-82 their imports increased by 13 per cent over 1980-81 which declined by 24 per cent in 1982-83 due to the drought. But with recovery in agricultural sector, their imports increased by 27 per cent in 1983-84 and 90 per cent in 1984-85.

So far as the imports of iron and steel and non-ferrous metals are concerned, variations in their values reflects sometimes domestic shortages or good production, as also higher demand from industry and building up of stock. For instance, the imports of iron and steel were to the tune of Rs. 193 crores in 1960-61 which fell to Rs. 81.5 crores in 1969-70 and again increased to Rs. 852.4 crores in 1980-81. But declined by 16 per cent in 1983-84 over 1982-83 and by 10 per cent in 1984-85 over 1983-84.

Similar was the case with non-ferrous metals whose value of imports was stationary at Rs. 75.5 crores in 1960-61 and 1969-70 but increased to Rs. 178.7 crores in 1974-75 and Rs. 477.4 crores in 1980-81. But fell to Rs. 412 crores in 1984-85.

The next important category of imports is capital goods. The imports of capital goods in value terms rose from Rs. 560.5 crores in 1960-61 to Rs. 804 crores in 1965-66. This was due to the policy of establishing capital intensive industries. But in 1969-70 and 1970-71, their imports were about one-half of what they were in 1965-66. This was the result of the slowing down of the tempo of domestic industrial production and restrictions of the import policy. In 1970s, imports in value terms started rising. This trend was the combination of a number of factors. First, sharp increases in the prices of capital goods by exporting countries. Second, progressive liberalisation of imports of machinery and components. Third, reduction in import duties on a number of machinery items. Consequently, total imports of capital goods rose from Rs. 404 crores in 1970-71 to Rs. 1,910.3 crores in 1980-81 and to Rs. 3,168 crores in 1984-85. The increase in 1984-85 over 1980-81 was about 66 per cent.

It can be concluded that the overall trends of imports reflects that India has been becoming an industrialised country where its dependence on consumer goods, except cereals and cereal preparations, has been eliminated and its requirements of imports are confined mostly to raw materials and intermediate manufacturers which account for more than 75 per cent of the total imports at present, and about 19 per cent in the case of capital goods.

Exports. Another noteworthy feature of India's foreign trade has

been the composition of its exports. In 1950-51, traditional exports like tea, jute and cotton textiles formed 55 per cent of its total export trade. Since then, the policy of industrialisation by import substitution along with the objective of a self-reliant economy has dispensed with India's dependence on traditional exports. They have considerably widened the commodity-mix of India's exports. Now exports include; besides traditional items, innumerable non-traditional items. Among the major non-traditional items are oil cakes, leather and leather manufacturers including footwear, cashew kernels, engineering goods, iron and steel, chemicals and allied products, fish and fish preparations, readymade garments, spices, handicrafts, etc. There are also many household consumer goods, bicycles, sewing machines, fans, air conditioners, refrigerators, scooters, and varied electrical appliances, etc.

The share of three main traditional items, viz., jute manufactures, tea and cotton fabrics, was about 48 per cent of total exports in 1960-61 which fell to 28.4 per cent in 1969-70, 27 per cent in 1970-71, 15.4 per cent in 1980-81 and to 13.3 per cent in 1984-85. On the other hand, some of the non-traditional items registered phenomenal increases in 1984-85 over 1960-61. For instance, the export value of iron ore increased by about eleven-fold, of oil cakes six-fold, of leather and leather goods eight-fold, of cashew kernel five-fold, of engineering goods fifty-five-fold, of iron and steel eight-fold, of chemicals and allied products forty-five-fold, of fish and fish preparations thirty-fold, and of spices nine-fold. Of the new items which have emerged as important exports during the 1970s are readymade garments and handicrafts. They registered increase of one hundred two times and twenty-three-fold in 1984-85 over 1970-71 respectively.

DIRECTION OF TRADE

The direction of India's foreign trade has undergone important changes since 1950-51. In 1950-51, the share of the UK in India's export trade was 21 per cent, of the USA 10 per cent, of Japan 1.5 per cent, of the USSR 2 per cent, and of oil exporting developing countries 4 per cent. So far as the share of these countries in India's imports was concerned, the UK's share was 26 per cent, the USA's 20.3 per cent, Japan's 1.8 per cent, oil exporting developing countries' 4 per cent, and Russia's share was nil.

Now India's trade relations are not confined to only a few countries, but they have considerably diversified, especially during the 1970s, to the EEC, ESCAP, OPEC, and East European countries.

Exports. The market-wise distribution of India's exports for the periods 1970-71 and 1984-85 shows that the share of the USA in India's total exports increased marginally from 13 per cent in 1970-71 to 15 per

cent in 1984-85. But the value of exports to the USA increased by more than eight times over the period. The share of the European Economic Community (EEC) countries in India's total exports fell from 18 per cent to 17 per cent over the period, and of the UK from 11 per cent to 5 per cent. In absolute terms, the share of the EEC increased seven-fold and that of the UK more than three-fold. On the other hand, the share of Asia and Oceania countries declined from 25 per cent to 10 per cent and of Japan from 13 per cent to 9 per cent, though the value of exports to these countries increased in absolute terms. India's exports to developing countries declined from 20 per cent to 15 per cent over the period. But the value of exports increased in absolute terms. Similarly, exports to the East European countries declined from 24 per cent in 1970-71 to 19 per cent in 1984-85. In the case of the OPEC countries India's export registered an increase from 6 per cent in 1970-71 to 8 per cent in 1984-85.

Imports. There have also been significant changes in the direction of India's imports during the 1970s. The share of the USA in India's total imports declined steeply from 28 per cent in 1970-71 to 10 per cent in 1984-85. The share of the EEC countries increased from 19.5 per cent to 24.6 per cent but that of the UK declined from 8 per cent to 5 per cent over the period. Imports from Asia and Oceania countries declined from 10.5 per cent to 8.6 per cent and that of Japan increased from 5 per cent to 7 per cent over the period. But the greatest increase occurred in the case of the OPEC countries whose share in India's imports rose from 7.7 per cent in 1970-71 to 24 per cent in 1984-85. This was due to the increase in the prices and quantities of petroleum oil and lubricants. As in the case of all countries and regions, the absolute level of imports in value terms increased considerably over the years for the East European countries but their share in India's total imports actually declined from 14 per cent to 12.6 per cent but it increased from 6.5 per cent to 10.5 per cent in the case of USSR over the period. However, in the case of developing countries imports from them remained almost stationary at 15 per cent, though they increased about eight-fold in absolute terms.

The direction of India's foreign trade, as analysed above, reveals that the country has geographically diversified its trade relation. It has larger outlets for its exports and varied sources of imports. Thus it has shed its dependence for exports and imports on a few countries and has really entered into multilateral trade.

BALANCE OF TRADE

India's trade balance has continuously remained in deficit except in 1972-73 and 1976-77. Trade deficits are a concomitant re-

economic development. For development, the country has been importing capital goods, raw materials, intermediate products, and even foodstuffs.

In 1950-51, India's trade deficit was Rs. 49 crores which continued to increase with every five-year plan till it reached Rs. 603 crores in 1965-66, as shown in Table 80.1. This was due to larger imports of capital goods, raw materials and intermediate products for setting up heavy and import-substitution industries. After the devaluation of June 1966, exports started looking up and there was also a decline in the import of foodstuffs. Consequently, the trade deficit declined to Rs. 99 crores in 1970-71 and there was a surplus of Rs. 104 crores in 1972-73.

The sharp increase of 58 per cent in the import bill in 1973-74 over the previous year while exports did not show much increase, led to a trade deficit of Rs. 432 crores. The increase in the value of imports was largely due to the increase in the prices of petroleum, oil and lubricants and also in the prices of fertilizers, non-ferrous metals, and iron and steel. Besides there was an increase in the prices and imports of foodgrains and vegetable oils. Thereafter, the trade deficit increased to Rs. 1,190 crores in 1974-75 and to Rs. 1,222 crores in 1975-76.

The year 1976-77 was a turning point in India's trade balance because during this year there was a small surplus of Rs. 69 crores after a record deficit in the previous year. This was on account of 27 per cent increase in the value of exports, and a decline in imports by 3.6 per cent over the previous year.

From this year onward, there had been huge increases in trade deficits due to slow growth of exports and fast rise in imports. The rise in the import bill was 19 per cent in 1977-78 over the previous year, 13 per cent in 1978-79, 34 per cent in 1979-80 and 37 per cent in 1980-81. On the other hand, the export bill increased by 5 per cent in 1977-78, 6 per cent in 1978-79, 12 per cent in 1979-80, and 4.6 per cent in 1980-81 over the previous year. Consequently, the trade deficit had been mounting from Rs. 612 crores in 1977-78 to Rs. 1,088 crores in 1978-79, to Rs. 2,725 crores in 1979-80, to Rs. 5,838 crores in 1980-81 and to Rs. 5,390 crores in 1984-85. The main reasons for the increase in imports during these years had been the increase in the quantum as well as the unit value of imports due to a liberal import policy and the need to meet the demand for petroleum and petroleum products. On the other hand, exports could not increase due to depressed international demand, the policy of protection adopted by developed countries, and the supply constraints in domestic production.

TERMS OF TRADE

India's net terms of trade have been unfavourable since 1974-75 thereby showing that India has been losing by trading with other countries. The net terms of trade are the ratio of unit value index of exports to unit value index of imports. In the 1950s, 1960s and early 1970s, the net terms of trade were on the whole satisfactory. For instance, in 1954-55 they were 110 (1952-53=100); in 1960-61 they were 115 (1958=100); and in 1972-73 they were 149 (1978-79=100).

In 1974-75, they declined to 92, and further to 85, in 1975-76, rose to 93 in 1976-77, and to 114 in 1977-78, but fell to 100 in 1978-79 and to all time low level of 81 in 1980-81 and then rose to 120 in 1983-84. The reasons for such low levels of net terms of trade had been a steep rise in the unit value index of imports as compared to the unit value index of exports. For instance, in 1974-75 the import unit value index rose by 73 per cent, whereas the export unit value index rose by 25 per cent. In 1979-80, the import unit value index rose by 14 per cent while the export unit value index showed an increase of 5 per cent. It shows that prices of India's exports had been rising slowly, as compared to the steeped rise in prices of imports. During 1970s the import prices increased on an average by 29 per cent per annum while the export prices rose by 14 per cent per annum on the average.

To have favourable terms of trade, India should reorder its import priorities, promote import substitutes, and mould domestic capabilities toward export industries. Ultimately, it is only by becoming self-reliant in essential imports that India can hope to overcome unfavourable terms of trade.

BALANCE OF PAYMENTS

Introduction. The balance of payments of a country is a symmetric period of all its economic transactions with the outside world in a given year. It shows the country's trading position, changes in its net position as foreign lender or borrower, and changes in the official reserve holding. The balance of payments account of a country consists of the current account, the capital account and the official settlements account. The official reserve assets account. The current account of a country consists of all transactions relating to trade in goods and services and transfers. Service transactions include travel and transportation and payments on foreign investments, etc. The capital account of a country consists of its transactions in financial assets in the form of short-term and long-term lendings and borrowings, and investments to and from foreign countries and

like the IMF, IBRD, etc. The official reserve assets of a country include its gold stock, holdings of its convertible foreign currencies and SDRs, and its net position in the IMF.²

India's Balance of Payments Position since 1951

Since the beginning of the First Plan in 1951, the Indian economy has, by and large, been facing deficit in its balance of payments. Table 80.2 gives a plan-wise summary of the country's balance of trade and balance of payments on current account.

TABLE 80.2. INDIA'S BALANCE OF PAYMENTS

(Rs. crores)

<i>Plan Period</i>	<i>Balance of Trade</i>	<i>Balance of Payments</i>
First Plan	- 541.9	- 42.3
Second Plan	- 2339.0	- 1712.6
Third Plan	- 2400.0	- 1972.5
Annual Plans	- 1967.6	- 1982.4
Fourth Plan	- 1563.9	- 2221.0
Fifth Plan	- 4043.0	+ 1404.3
Sixth Plan*	- 30456	- 13936

*Preliminary

The balance of payments position was more satisfactory than anticipated during the First Plan. The Plan had estimated an average annual deficit of Rs. 180 to 220 crores. But the actual deficit for the entire Plan period amounted to Rs. 42.3 crores. The reason was that this was a modest plan which did not introduce fresh schemes. Good monsoons did not necessitate imports of foodgrains and agricultural raw materials. There was substantial increase in agricultural and industrial production.

The Second Plan was an ambitious and bold plan which aimed to the development of industries and transport. This necessitated the imports of heavy machinery, equipment, and essential raw materials. Uncertain monsoons led to large imports of foodgrains and agricultural raw materials. Consequently, acute foreign exchange crisis developed due to a large trade deficit of Rs. 2,339 crores and balance of payments deficit of Rs. 1,712.6 crores.

²This introductory para may be left out by students if they so desire.

The balance of payments position remained tight during the Third Plan. The balance of payments deficit was very high, being Rs. 2,400 crores. The main reasons were rise in imports of industrial raw materials, machinery, maintenance imports and defence equipment due to the Chinese aggression of 1962 and the Indo-Pak War of 1965 and fall in the exports of traditional items like cotton textiles and jute goods. Besides, there was also a large increase in the debt-service burden.

Heavy trade deficits and debt obligations during the Third Plan led to the devaluation of the rupee in June 1966. Despite devaluation, and the adoption of liberal import policy and encouragement to exports following it, the balance of payments position continued to be serious. The failure of monsoons necessitated large imports of foodgrains for the first two Annual Plans 1966-67 and 1967-68. The usual imports of machinery, plants and raw materials continued. In the Third Annual Plan of 1968-69, exports increased by 13.5 per cent and imports declined marginally but the overall balance of payments position did not improve as the value of imports rose and that of exports declined due to the devaluation. Consequently, the balance of payments deficit during 1966-67 to 1968-69 was Rs 1,982.4 crores.

During the Fourth Plan, the average annual growth rate of exports was quite high, being 12.8 per cent. Despite this, the balance of payments deficit for the Plan period was Rs. 2,221 crores. A severe and widespread drought in 1972-73 forced the country to import large quantities of foodgrains at unprecedented high prices. Further, the world prices of several major items of imports like petroleum oil and lubricants, steel, non-ferrous metals, newsprint, etc. rose sharply. To those were added heavy debt service payments amounting to Rs 2,443 crores during the Plan period.

During the Fifth Plan, the overall balance of payments position was very satisfactory. For the first time, the balance of payments on current account for the entire Plan period was plus Rs 1,404.3 crores. This was due to the marked improvement in India's external payments position during 1976-77 and 1977-78, as a result of the continued rise in merchandise exports. At the same time imports did not register a slow rise due to a sharp reduction of food and fertilizer imports. In 1976-77, imports declined by 3.6 per cent and exports increased by 27 per cent over the previous year. Coupled with improvement in the balance of trade, there was a large increase in net invisibles of the current account. But in the last year of the Plan 1978-79, imports increased substantially, particularly on account of import liberalisation policy. On the other side, exports slackened due to recessionary situation in the world market and protectionist tendencies in the major industrialised countries.

The Sixth Plan (1980-85) estimated the balance of payments deficit at Rs. 9,100 crores and the balance of trade deficit at Rs. 17,773 crores during the Plan period. But the balance of payments performance during the Sixth Plan had been far from satisfactory than initially anticipated. The balance of payments deficit on current account was Rs. 13,936 crores as against the estimated amount of Rs. 9,100 crores. The principal reasons for this large deficit during the Sixth Plan was a huge trade deficit amounting to Rs. 30,456 crores on account of increased imports of POL, fertilizers and chemicals, raw materials and intermediate products, and capital goods. At the same time, exports grew slowly due to domestic supply constraints, unfavourable world environment and increase in protectionism by the developed countries. There was also a declining trend in net invisibles mainly because gross invisible receipts increased at a compound rate of 15.2 per cent, while invisible payments increased at a higher rate of 15.2 per cent. Among the non-factor services, there was fall in foreign travel receipts and investment income receipts. Moreover, foreign exchange services, including gold and SDRs, increased by only Rs. 1,309 crores during the Plan period. Thus the balance of payments were under heavy strain over the Sixth Plan.

Measures to Improve the Balance of Payments Position

The Government of India has been concentrating on three principal measures to improve the balance of payments position. They are external assistance, export promotion and import substitution.

External Assistance. External assistance in the form of loans and grants has been an important source for bridging the gap in India's balance of payments. In the First Plan, the balance of payments deficit was financed to a large extent by withdrawals from the sterling balances accumulated in the pre-Independence period. Consequently, the percentage of imports financed by net aid in the First Plan was only 4.9 per cent. But with the steep decline in the foreign exchange reserves to the tune of Rs. 52 crores in the Second Plan, the percentage of imports financed by net aid increased to 26.9 per cent which further rose to 37.5 per cent in the Third Plan and the three Annual Plans. But in the Fourth Plan and the Fifth Plan, it declined to 17.6 per cent and 12.9 per cent respectively. During the Sixth plan, net aid financed 8.2 per cent of imports. The increase in the prices of POL in 1973-74 and again in 1978-79 has increased the import bill manifold these years. Consequently, the percentage of imports financed by net aid has been on the decline.

On the other hand, net external assistance has been on the decline due to the increase in servicing. Debt service obligations increased from

Rs 450 crores in 1970-71 to Rs 1,176 crores in 1984-85. Thus external aid is no permanent solution to the balance of payments problem.

Export Promotion.* Export promotion is an instrument to earn more foreign exchange to bridge the balance of payments gap. For this, a number of measures have been adopted from time to time. These include (1) a number of organisations dealing with foreign trade with a definite set of objectives; (2) intensive schemes for the import of raw materials, machinery and capital equipment duty free or at concessional rates for export units; (3) fiscal incentives such as duty draw-back and duty exemption scheme, cash compensatory support, and concessions in direct taxes; (4) 100 per cent export-oriented units scheme with duty free imports of capital goods, plant and equipment, raw materials and components, indigenously available capital goods, raw materials, etc., without any central excise duty, and finished products exempt from excise and other duties; (5) special rail and shipping facilities, (6) liberalisation of exports by abolishing and/or reducing export duties on commodities from time to time, granting liberal credit facilities to exporters, etc.

As our exports have diversified considerably over the years, the need is to adopt export promotion measures in keeping with the problems faced by each category of exports. There are some commodities which are subject to demand constraints such as jute, tobacco, tea, etc. They are faced by protectionist policies of the developed countries. There are other items which have supply constraints in the form of high cost of production, competitive prices, low quality, etc. There are numerous and varied products in this category such as iron ore, marine products, engineering and chemicals, sugar, light electricals, plastics, cashews, coffee, products of agriculture and allied activities, etc. Still there are other products which have both demand and supply constraints such as textiles, leather and leather manufactures, carpets, handicrafts, and garments. Products with demand constraints need competitive prices based upon incentives, improving their quality, attractive presentation and economies of scale in transactions. On the other hand, in the case of exports for which supply is the major constraint domestic factors like economies of scale in production, transport and quality products in sufficient quantities are more important. One of the weaknesses in our export efforts is marketing. Often exporters miss the opportunity of participating in global tenders because of late receipt of information. Sometimes, changes in policies and procedures in overseas countries do not reach them in time. There is thus the need for an organisation which may provide exporters with the export market intelligence on a regular basis.

*For more details on export promotion and import substitution, refer to Ch. 18.

An important avenue for export promotion is the formation of Free Trade Zones (FTZ). There are six FTZs at Kandla, Santa Cruz (Bombay), Madras, Cochin, Falta (W. Bengal) and NOIDA (U.P.). The main incentives of the FTZs are freedom of import of capital goods under the OGL and duty free; blanket permission of business visits aboard and grant of approval in a single point, etc. Moreover, a complete tax holiday is allowed to newly established undertakings in FTZs for a period of five years.

Moreover, "counter trader" is an other export strategy whereby payments for the import of various raw materials and other inputs are made through the export of domestic manufactured goods to the other country.

The problem with our export promotion policy is that there is a plethora of schemes and organisations which lead to unnecessary duplication. Both the Government and the exporting community should devise jointly a dynamic export marketing strategy for various items and sectors. "Such a strategy should cover an appropriate marketing mix of proper pricing, competitive production, distributive set-up abroad and overseas promotion."

The need is to have an integrated development plan for exports which should fit in the overall development programme of the country. The export promotion policy should not only aim at increasing foreign exchange earnings but also raising income and employment within the economy. Stressing the importance of a sustained increase in exports over a period of years, the Sixth Plan document emphasised the creation of a stable policy environment as well as measures for increasing production for export and production generally. It pointed out that frequent changes in policies create uncertainty which is harmful for the establishment of a stable market aboard and for risk-taking inherent in investment decisions. It envisaged maximum attention need to be given to the following measures: (a) Removing the disadvantages from which the exporters suffer because of restrictions on imports; (b) removing obstacles to the expansion of capacity for export; (c) streamlining the existing cash compensation and other schemes intended to remove the disadvantages on exports on account of taxation and physical controls operating in the economy; (d) ensuring that the Government policies are such as not to discriminate against exports and production for exports, the need being to make exports marginally more profitable than import substitution in order to diversify export trade which includes capturing new markets aboard and retaining them; and (e) maintaining adequate links with technological developments abroad so that our export capability is not hurt by outdated technology. The Plan made provisions for investments necessary to remove infrastructural

bottlenecks in power and transport and to improve the environment for increased production and export. It also emphasised on a tight control on domestic demand to help the export effort through expenditure control, and appropriate monetary and credit policies.

The Seventh Plan carries forward these measures more vigorously. But lays more stress on high technology imports in the export sector. At the same time, it emphasises that in order to avoid excessive costs of imported technologies, progressive development of local technological capabilities. Further, the Plan highlights the importance of service exports, particularly earnings from tourism, which have a relatively large value added component. For this, it recommends: (i) greater attention to competitiveness relative to other destinations with regard to both price and non-price factors; (ii) consolidation and strengthening of publicity on tourism which should be related to the different types of tourism categorised by tourist areas of interest and per capita expenditure so as to maximise earnings; (iii) further specialisation between private and public sectors in the future development of tourism so that the public sector should devote greater attention to general promotion, transportation and other basic infrastructure, and the private sector should take up other aspects of tourist development including hotel construction; and (iv) in order to maximise foreign exchange earnings from new investment in high cost tourist facilities for foreign travellers in the form of five star hotels should be discouraged through appropriate taxes.

Import Substitution. Import substitution is another measure to bridge the balance of payments gap. It aims at saving foreign exchange. India has been following the policy of import substitution in the form of domestic production of consumer goods of all types including food-grains, capital goods and the development of research and technology indigenously. Besides, India manufacturers and exports a wide variety of durable consumer goods which it used to import before Independence. Still, a very large number of our imports consists of non-ferrous metals, fertilisers and POL. So the need is to increase production in these areas so as to save foreign exchange and to raise the growth rate of output as a whole. But the policy of import substitution has led to the development of a number of industries under excessive protectionism which do not conform to the criteria of social essentiality. Further, it has led to the production of low quality and high-cost commodities as compared to the imported goods. These aspects need to be corrected at the earliest.

Conclusion. The success of any policy, whether in the field of export promotion or import substitution depends on the capacity of the economy to increase production for meeting both the domestic

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(i) increasing publicity on tourism which should be related to the different types of tourism categorised by tourist areas of interest and per capita expenditure so as to maximise earnings. (ii) further specialisation between private and public sectors in the future development of tourism so that the public sector should devote greater attention to general promotion, transportation and other basic infrastructure, and the private sector should take up other aspects of tourist development including hotel construction, and (iv) in order to maximise foreign exchange earnings from new investment in high cost tourist facilities for foreign travellers in the form of five star hotels should be discouraged through appropriate taxes.

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Conclusion. The success of any policy, whether in the field of export promotion or import substitution depends on the capacity of the economy to increase production for meeting both the

requirements as well as international demand. This requires high rates of investment, adequate growth of infrastructure, vigorous resources mobilisation, strict demand management, freeing of exports from restrictions and other regulatory measures including indirect taxation, improvements in productivity and healthy industrial relations. Instead of harping on the slogan "export or perish", India should adopt the slogan "export and flourish" as the guiding principle for the future.

Chapter 81

FOREIGN CAPITAL AND TECHNOLOGY IN INDIA

INTRODUCTION

India receives foreign capital in the form of: (a) direct foreign investments by MNCs, (b) indirect investment, known as 'portfolio' or 'rentier' investment when foreign concerns/individuals subscribe to the shares and debentures of Indian companies, (c) foreign collaborations between private Indian and foreign concerns, between Indian government and foreign concerns between Indian and foreign Governments, and lastly, public foreign capital, known as foreign aid or external assistance, in the form of grants and loans on bilateral basis from developed countries, and multilateral basis from the Aid India Consortium, the IBRD, the IMF, and other UN agencies.

GOVERNMENT POLICY TOWARDS FOREIGN CAPITAL AND TECHNOLOGY

The Government of India's policy regarding foreign capital was enunciated in the Industrial Policy Resolution of 6 April 1948 and in the Prime Minister's Statement in the Constituent Assembly in April 1949. The latter laid down that "(a) the participation of foreign capital and enterprise should be carefully regulated in the national interest by ensuring that major interest in ownership and effective control should, save in exceptional cases, always be in Indian hands, that the training of suitable Indian personnel for the purpose of eventually replacing foreign experts will be insisted upon in all such cases, (b) there will be no discrimination between foreign and Indian undertakings in the application of general industrial policy; (c) reasonable facilities will be given for the remittance of profits and repatriation of capital consistent with the foreign exchange position of the country, and (d) in the event of nationalization, fair and equitable compensation will be paid."

Since then the Government has scrupulously adhered to this policy statement and has been granting facilities to foreigners to invest and collaborate in those fields which are considered essential for the country's development; those which require large capital investment and complex production processes; those which help to import-substituting and export-oriented products.

take to train Indian entrepreneurs, technicians and labour in the operation of the enterprise; and those which help to improve the country's foreign exchange resources.

It was, however in the Industrial Policy Statement of 1973 that a clear cut policy with regard to foreign concerns and subsidiaries and branches of foreign companies was laid down for the first time. All such companies were made eligible to participate in the group of 19 industries specified in Appendix 1 but were ordinarily excluded from other industries. They were to be on the basis of foreign collaboration with Indian entrepreneurs in the fields of equity capital, know-how and technology. The Industrial policy statement of 1977 restricted foreign equity participation to 40 per cent. The participation of foreign investment and foreign companies was made strictly in accordance with Foreign Exchange Regulation Act (FERA). It was also laid down that the Government would issue a list of industries where no foreign collaboration was deemed necessary.

The Industrial policy statement of 1980 laid the following guidelines regarding foreign collaboration and technology. In order to promote technological self-reliance, the Government recognises the necessity of continued inflow of technology in sophisticated and high priority areas. In areas, where Indian skills and technology are not adequately developed, the Government would prefer outright purchase of the best available technology so as to adapt it to the needs of the country. Indian firms which are permitted to import foreign technology would be required to set up adequate R and D facilities so that imported technology is properly adopted and assimilated within the country. The Government would also set up a national registry of foreign collaboration in the Secretariat of Foreign Investment Board so that there is continuous monitoring of these efforts.

Regarding participation of foreign investment and foreign companies in India's industrial development, the Government made it clear that the provisions of the FERA would be strictly enforced on the existing foreign countries. After the process of dilution under this Act has been completed, companies with direct non-resident investment not exceeding 40 per cent will be treated on par with Indian companies, except in cases specially notified. Their future expansion will also be guided by the same principles as those applicable to Indian companies.

Foreign investment and import of technology necessary for India's industrial development would be allowed only on such terms as are in the national interest. The objective is to develop technologies which are suitable to the needs of the country in a given time frame and within increasing degree of self-reliance. In areas where foreign-technological know-how is not needed any more, existing collaboration will not be

renewed, and foreign companies will have to modify their character in conformity with national priorities within the framework of the FERA. financial or technical collaboration will be allowed.

In regard to fees payable under collaboration arrangements, the Government approves lumpsum payments and separate royalty payments where necessary. The royalty payable is not more than 5 per cent taxable and will be comprised within the period of agreement, which may extend to 10 years. The period of going into production is included within this period of 10 years. The total lumpsum and royalty payments should not be more than 8 per cent of total expected sales, calculated on ex-factory value basis, over a period not exceeding 10 years. It is desirable that normally the period of agreement should be for eight years and royalty for five years allowing three years for commencement of production. If within the duration of 10 years, production commences earlier, the foreign collaborator would have the benefit of getting royalty for a longer period than five years.

For all approved foreign investment, financial and/or technological, there will be complete freedom for remittance of profits, royalties, dividends, as well as repatriation of capital, subject to rules and regulations common to all. As a rule, majority interest in ownership and effective control would be in Indian hands. There may however, be exceptions in highly export-oriented and/or sophisticated technology areas. In hundred per cent export-oriented areas, even a fully owned foreign company may be allowed.

In the light of the guidelines mentioned above, the Government issues illustrative list of industries where no foreign financial or technical collaboration is considered necessary. At the same time, the Government recognises the need to update technology in almost all industries over a period of time because constant technological advancements are taking place in developed countries. Therefore, the Government may consider the import of technology even in the fields mentioned in the list: (a) where developed/exported indigenous technology is too closely held and is not available for use by the entrepreneurs on competitive terms; (b) where technology is required for updating of existing technology to meet efficiency domestic requirements or to become competitive in the export market; and (c) where such import is required for manufacture of items with substantial exports backed by buy-back guarantees. In short, foreign technology is permitted in sophisticated and high priority areas, in export-oriented or import substitution manufacturing or for enabling indigenous industry to update existing technology to meet effectively competition from monopolistic units, to suit changing consumer preferences or to become competitive in the export market.

FOREIGN AID UNDER THE FIVE YEAR PLANS

India has been receiving foreign aid in the form of loans, grants and under the United States Public Law 480/665, etc., repayable in convertible currency and rupees. The gross and net aid received in different Plan periods is indicated in Table 81.1. The Table shows that net aid as a percentage of Plan expenditure rose from 9.1 per cent in the First Plan to 28.1 per cent in the Second Plan, to 27.2 per cent in the Third Plan, 33.9 per cent in the three Annual Plans and thereafter it started declining to 11.2 per cent in the Fourth Plan, to 9.1 per cent in the Fifth Plan and to 5.4 per cent in the Sixth Plan. But in absolute terms both the aid utilised and net aid have been increasing over the Plan periods. From a meagre sum of Rs 202 crores of aid utilised in the First Plan, it had reached to a massive sum of Rs 10,903 crores in the Sixth Plan. Similarly, the net aid received had increased from Rs 177 crores in the First Plan to Rs 6,094 crores in the Sixth Plan. This shows the magnitude of our dependence on foreign aid.

TABLE 81.1. GROSS AND NET AID PLAN PERIODS

(Rs crores)

Sl. No.	Period (2)	Utilisation of External Assistance (3)	Amortisation and Interest Payments (4)	Net Aid (5)	Net Aid as % of Plan Expenditure (6)
(1)					
1	First Plan 1950-51 to 1955-56	201	24	177	9.1
2.	Second Plan 1956-57 to 1960-61	1430	119	1311	28.1
3.	Third Plan 1961-62 to 1965-66	2877	542	2325	27.2
4	Annual Plans 1966-67 to 1968-69	3230	983	2247	33.9
5	Fourth Plan 1969-70 to 1973-74	4184	2445	1739	11.2
6.	Fifth Plan 1974-75 to 1978-79	7259	3684	3575	9.1
7.	1979-80	1353	801	552	—
8.	Sixth Plan 1980-81 to 1984-85	10903	4809	6094	5.5
	Total	31437	13407	18020	—

The overall external assistance authorised to India from April 1951 to March 1985 was of the order of Rs 41,166 crores. Of this, Rs 31,437 crores had been utilised. Which shows a utilisation rate of 75 per cent. This means that the absorptive capacity of the economy is quite high. But over the years the utilisation rate has not been uniform. Rather, it has been fluctuating, sometimes reaching hundred per cent as during the Fourth Plan and at other times even exceeding hundred per cent as during the Third Plan (102%), the Annual Plans (102%) and the Fourth Plan (103.3%), as revealed by Table 81.2. But during the first two Plans

the rates of aid utilisation were 55 and 56 respectively. This was due to project aid by the donor countries and time consuming formalities of preproject surveys in India, delays imposed by the industrial and import licensing procedures of the Government, and lack of coordination in various government agencies. However high rates of utilisation are treacherous and must be interpreted carefully. Thus, for example, the low rate of utilisation in the Second Plan conceals the fact that authorisations for commodity assistance to be utilised in the Third Plan, happened to be bunched at the end of the Second Plan; a fact which brings out the misleading character of rates of utilisation based on Plan periods.¹ However, after the recommendations of the V K.R.V. Rao Committee on utilisation of External Assistance in 1964, the procedures for utilisation have been streamlined. Consequently, the rate of utilisation had been quite high, except for the Sixth Plan when it slumped to 66 per cent. This has been primarily due to the delay in authorisation on the part of the consortium countries.

TABLE 81.2 AID AUTHORISATION AND UTILISATION

(Rs Crores)

Period	Authorised	Utilised	Rate of % Utilisation
First Plan	362	201	55
Second Plan	2539	1430	56
Third Plan	2810	2877	102
Annual Plans	3172	3230	102
Fourth Plan	4172	4184	100.1
Fifth Plan	9644	7259	94
1979-80	1860	1353	—
Sixth Plan	16407	10413	66
Total	41,166	31437	75

Another source of external assistance is commercial borrowings and suppliers' credits. These are for shorter terms and considerably costlier than the normal sources. They are used to finance specific public sector units like ONGC, NALCO, BHEL, Maruti Udyog, Air India, etc., though a few private sector units are also permitted to obtain commercial loans on a selective basis. The amount of commercial borrowings approved from 1980-81 to 1984-85 amounted to Rs 7,259 crores. For the earlier periods, they are included in the aid utilised.

Of the total aid utilised by India upto 1984-85, 78% had been in

¹J. N. Bhagwati and P. Desai, *India Planning for Industrialisation*.

the form of loans, 14 per cent in the form of grants and the remaining as PL 480/665 assistance. Of the loans, 30 per cent are in the form of untied credits and the remaining are tied credits. Since the bulk of the loans are tied, they tend to push up the cost of the projects by more than 30 per cent to India because the country is required to pay more than the competitive world market prices to the creditor country. It increases further when, as in the case of US supplies, India is forced to get machinery, spare parts, raw materials, etc. in American ships. This not only tends to reduce the real value of aid to the country but also distorts the allocation of resources within the country.

One of the important aspects of foreign aid is the growing burden of *debt servicing*. It consists of amortisation and interest payments involving foreign exchange and export of goods. Debt service payments as a percentage of gross aid utilisation has been steadily rising with every Plan, as is apparent from column (4) of Table 81.1. By 1984-85 the total debt service as a percentage of gross aid utilisation was 43 per cent which shows that debt servicing has been offsetting a large part of external assistance. As a result, only 57 per cent of the total aid was left for purposes of development. Plan-wise, debt service ratio was the highest, 58 per cent, during the Fourth Plan which fell to 51 per cent in the Fifth Plan and further to 45 per cent in the Sixth Plan. The burden of debt servicing can be further realised from the fact that debt service as percentage of GNP at current prices was 2.5 and of exports 41 in 1984-85. Further, as the repayment of the IMF loan begins in 1985-86 and of recent commercial borrowings becomes due, India's debt servicing problem will be significantly larger during the Seventh Plan.

Conclusion. The prospects for external assistance do not appear promising during the Seventh Plan. India faces a serious decline in the availability of concessional assistance, not only due to the reduction in the seventh replenishment for the IDA at a lower limit of \$ 9 billion, but also due to the entry of China. Even if a reduction in the volume of IDA assistance is partially offset by additional lending by the World Bank, the terms of lending of the latter are considerably harder, so that the net effect would be increase in the debt burden. Since India's past debt service payments will increase, it will mean a sharp decline in the net flow of assistance. Under the circumstances, it will be imperative to keep the volume of future commercial borrowings within strict limits, consistent with a wise debt management policy. Thus prospects of reduced inflow of aid and rising debt service payments pose a serious challenge in the face of increase in investment requiring larger imports during the Seventh Plan.

**IMPACT OF FOREIGN CAPITAL AND TECHNOLOGY
ON INDIA'S ECONOMIC DEVELOPMENT**

Foreign capital and technology have been playing a useful role in India's economic development. At the time of Independence; India inherited an industrial structure restricted to a few industries like textiles and sugar. There were only two steel plants and some limited development of engineering in railway workshops and assembly plants. Today, the industrial structure has been widely diversified covering broadly the entire range of consumer, intermediate and capital goods. In most of the manufactured products, the country has achieved a large measure of self-sufficiency with foreign collaboration but primarily through domestic efforts. This is indicated by the decline in relative share in industrial production of the traditional manufacturing sectors like food and textiles and the substantial increase in the production of new sectors like engineering and chemicals. The diversification of industrial structure is further reflected in the commodity composition of our foreign trade in which the share of imports of manufactured products has steadily declined and that of engineering products has become a growing component of exports. The rapid stride in industrialisation has been accompanied by a corresponding growth in technological and managerial skill obtained from abroad, not only for efficient operation of highly complex and sophisticated industrial enterprises but also for their planning, design and construction.

Foreign capital has also been instrumental in filling the gap between domestic savings and the capital needed for development. This is revealed by the net aid as percentage of Plan expenditure in Table 81.I During the Second Plan, the Third Plan and the Three Annual Plans, its contribution had been very substantial, being 28 per cent, 27 per cent and 34 per cent respectively.

Further, foreign capital has helped the country in supplying the much needed foreign exchange, thereby filling the foreign exchange gap to a considerable extent. The foreign exchange gap equals the difference between imports and exports which can be filled by net capital inflow. Net foreign aid as a percentage of imports increased from 4.9 per cent in the First Plan to a peak of 37.5 per cent in the Third Plan. Thereafter there had been a steady decline during the Fourth Plan and the Fifth Plan, net aid financed 17.6 per cent and 12.9 per cent of imports. During the Sixth Plan, net aid financed 8.2 per cent of imports.

Foreign capital has been a major factor in India's drive towards self-reliance and import substitution in critical areas. Import substitution has led to diversification of domestic production and consequent reduction in imports for certain critical areas like machineries.^{fsc}

ture, crude oil and petroleum products, infrastructural development, etc. Even in such areas as project consultancy, design engineering and project implementation, the country has been able to export these services. This has been made possible through the development of indigenous expertise with the help of foreign assistance.

In fact, India has been receiving foreign technical assistance in two broad categories of services: (a) engineering-related such as feasibility studies, designing, and construction supervision; and (b) institutional improvements, project-related training and management and policy studies. This has helped in upgrading Indian expertise and personnel to international levels.

Foreign aid has increased India's ability to cope with shortfalls in food production and raw materials for consumer goods industries. India has been importing substantial quantities of foodgrain, oils and raw materials at concessionary terms during recurring droughts. Help by international organisations in the field of agricultural research has led to the development of new agricultural technologies in tools, implements, seeds, irrigation, cropping pattern, better farm practices, etc. This has resulted in manifold increase in food production. Thus it is on the basis of food imports and increased food production within the country, that the Government has been able to build large buffer stocks and stabilise food prices.

Besides, foreign aid from international organisations like the World Bank and IDA have helped India in expanding and modernising its irrigation and power potential, development of rail, road and sea transport, communications, etc.

Above all, foreign aid has been assisting the Government in the development of its integrated health and family welfare programmes throughout the country.

Chapter 82

MONOPOLY AND CONCENTRATION OF ECONOMIC POWER IN INDIA

INTRODUCTION

The growth of monopolies and concentration of economic power has been associated with economic growth in a capitalist economy. As the economy grows, wealth, income and sources of income get concentrated in the hands of a few capitalists. This has been the experience of all developed and developing countries India being no exception. Realising the evils of monopoly growth and concentration of economic power, the Indian Constitution laid down in its Directive Principles of State Policy: "(1) that the ownership and control of the material resources of the community are so distributed as best to subserve the common good; and (2) that the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment." The Industrial Policy Resolution of April 1956 and the subsequent Indian Five-Year Plans have been emphasising the progressive reduction of concentration of incomes, wealth and economic power. Before we discuss these twin problems of monopoly and concentration in all their facets, it is essential to understand their meaning.

MEANING

In ordinary language, monopoly refers to a single producer or seller who controls the supply or price of a product in a market or industry. In reality, there may be a few producers or sellers who may combine to produce, supply or distribute certain goods. In India such undertakings have been divided into dominant undertakings and monopolistic undertakings. A dominant undertaking is "an undertaking which either by itself or along with inter-connected undertakings produces, supplies, distributes or otherwise controls not less than one-third of the total goods and services in its line of business that are produced, supplied or distributed in India in terms of their value, cost, price, quantity, capacity or the number of workers employed." On the other hand, monopolistic undertaking "is a dominant undertakings or which along

with not more than two independent undertakings produces, supplies, distributes or otherwise controls not less than *one-half* of the total goods and services in its line of business that are produced, supplied or distributed in India in terms of their value, cost, price, quantity, capacity or the number of workers employed."

Such dominant and monopolistic undertakings exercise monopoly power which leads to the prevalence of monopolistic and restrictive trade practices in certain sectors of the economy.

The Monopolies Inquiry Commission (1965) defined a *monopolistic trade practice* as one which is resorted to by persons enjoying monopoly power to reap the benefits of that power by action, understanding or agreement tending to or calculated to preserve, increase or consolidate such power. But the Monopolistic and Restrictive Trade Practices Act 1969 defined a monopolistic trade practice in concrete terms "as a practice which has or is likely to have the effect of (i) maintaining prices at an unreasonable level by limiting, reducing or otherwise controlling the production, supply or distribution of goods of any description or the supply of any services or in any other manner; (ii) unreasonably preventing or lessening competition in the production, supply or distribution of any goods or in the supply of any services; and (iii) limiting technical development or capital investment to the common detriment or allowing the quantity of any good produced, supplied or distributed or any service rendered in India to deteriorate."

The term *restrictive trade practices* was defined by the Monopolies Inquiry Commission as "practices other than those pursued by monopolists who obstruct the free play of competitive forces or impede the free flow of capital or resources into the stream of production or of the finished goods in stream of distribution at any point before they reach the hands of the ultimate consumers." Such restrictive trade practices include exclusive dealing arrangements, minimum sale price maintenance agreements, resale price maintenance agreements, tie-up agreements, exclusive sale distribution agreements, any agreement for exclusion of any person from any trade association, etc.

The MRTP Amendment Act of 1984 has added a new Section 36A to Unfair Trade Practices' to protect the interest of the consumer. This section lays down that unfair trade practice means a trade practice, which for the purpose of promoting the sale, use or supply of any goods or for the provision of any services, adopts one or more of following practices and thereby causes loss or injury to the consumers of such goods or services, whether by eliminating or restricting competition or otherwise. Broadly, such practices are which make a false representation regarding the goods, its standard, quality, composition, style or model or misleading representation concerning the goods.

The concentration of economic power is a part of the larger issue of economic concentration. "The issue of economic concentration is...two fold in nature. On the one side, there is the question of industrial concentration, of degree to which a few firms dominate the output of industries taken individually. On the other side, there is the question of inequality of wealth and income in the economy as a whole." Thus the concentration of economic power refers to the concentration of the wealth and income of a country in the hands of a few families, persons or group of persons or business houses. The Monopolies Inquiry Commission explained the concentration of economic power in India as (1) product-wise and industry-wise concentration, and (2) country-wise concentration. Product-wise concentration exists where in respect of the production and distribution of any particular commodity or service the controlling power whether by reason of ownership of capital or otherwise in a single concern or comparatively limited number of concerns or through a fairly large number of concerns. These themselves are controlled by only a single family or a few families or business houses. Industry-wise concentration exists when an industry is engaged in the production of one product. On the other hand, country-wise concentration exists when many firms or concerns are engaged in the production or distribution of different commodities and are controlled by one group of business interests.

CAUSES OF CONCENTRATION

Many and varied causes have led to the growth of monopoly and economic power in India. Some of the causes are discussed as under

1. Control over the Banking and Insurance System. Before the nationalisation of banks in July 1969, the majority of banks and insurance companies in India were under the control of a few big business houses which owned their majority shares. The majority of deposits of such banks and insurance companies were used to finance the expansion and starting of new concerns under the control of big business houses. This led to the growth of monopoly and concentration of economic power.

2. Managing Agency System. The managing agency system which prevailed in India till March 1970 has been an important cause of the concentration of economic power. India lacked in capital and managerial and entrepreneurial skills in its phase of industrialisation. This led to the development of the managing agency system which helped in the supply of funds and managerial skills for starting new concerns. They bought the majority shares and debentures of such companies and thus got the right to control them. Managing agencies in India were found to

control as many as 20 to 90 concerns. R.C. Dutt, a member of the Monopolies Inquiry Commission, pointed out that the managing agency system "was devised to facilitate concentration and should, therefore, be looked upon as an instrument of concentration."

3. Economies of Large Scale Production. Technological advancement has led to the reaping of internal and external economies of large scale production. This has increased production and reduced the cost of production of goods. Therefore, big industrial houses have been interested only in starting large concerns in different or related fields. This has led to the growth of monopoly and concentration of economic power in a few hands.

4. Diversification Policy. A few big houses in India have been following the policy of diversification of industries by establishing concerns relating to different industries. For instance, the Tata group manufactures iron and steel, engineering goods, textiles, chemicals, edible oils, electric and electronic goods, non-ferrous metals, etc.

5. Technical Integration. The policy of technical integration has also resulted in the concentration of economic power in a few business houses in India. For instance, the Birla group manufactures sugar, chemicals used for its manufacture, wine from molasses, machines to manufacture sugar, paper from sugarcane waste and machines for the manufacture of paper. It has a similar hold over the jute industry.

6. Second World War. The Second World War was another cause of the concentration of economic power in India. The British Government needed huge supplies to meet the requirements of forces operating from India on the Burma front. It, therefore, provided all facilities to manufacturers to expand their existing capacities and to start new production units. A few industrial houses took advantage of this opportunity and established monopolies in certain spheres of production.

7. Industrial Policy. The industrial policy formulated by the Government of India from time to time has also encouraged the growth of monopoly and economic power. In the Industrial Policy of 1956, 11 industries out of 17 listed in Schedule A and 9 out of 12 listed in Schedule B could be started by the private sector. These related to heavy industries requiring large capital investments which could only be started by persons with high entrepreneurial abilities. Naturally, only a few big industrialists or business houses were able to enter such lines of production which has led to the growth of monopoly and economic power.

8. System of Industrial Licensing. The industrial licensing policy and procedures adopted by the Government of India also favoured the big business houses and industrialists. The licensing authority grants

licences only to those persons who can raise capital from the market, have enough organisational and entrepreneurial experience, and can collaborate with some foreign concern. Under such a system, no new entrepreneur can venture to enter the field. Moreover, 'the first come-first served' principle adopted by the licensing authority also helps the big industrialists and business houses who can get immediate information through their vast resources about any change in the policy at New Delhi. As the Monopolies Inquiry Commission observed: "We are convinced that the system of controls is to the shape of industrial licensing, however, necessary from other points of view, has restricted the freedom of entry into industry and so helped to produce concentration." Similar views were expressed by the Hazari Committee (1969). Even the Dutt Committee (1969) blamed the industrial licensing policy for growth of monopoly power and concentration of economic power in India. It pointed out that 20 industrial houses comprising 1,125 companies secured 41 per cent of the licensed investment during 1956-61. It observed that the industrial licensing policy led to the concentration of economic power in a few hands and failed to encourage new entrepreneurs.

9. Role of Public Sector Financial Institutions. Public sector financial institutions like IDBI, IFCI, ICICI, LIC, etc. have also favoured industrial houses in granting direct loans. The Dutt Committee found that of the total financial assistance disbursed by public sector financial institutions, 20 per cent went to the 20 largest industrial houses and 42 per cent to 73 other industrial houses. An other study revealed that of the total loans disbursed by IDBI, IFCI, ICICI and LIC up to 31 March 1972, the seven largest industrial houses received 18 per cent and 73 other large houses received 42 per cent.

10. Policy of Protection. It was the policy of discriminatory protection based on the Triple Formula of 1920 which laid the foundations for monopoly and economic power in India. Some of the industries which got protection concentrated on establishing monopoly power under the grab of protection. After independence, the policies of import controls on a wide scale and of strict exchange controls have further led to the concentration of economic and monopoly power. These policies have put an end of the fear of foreign competition and encouraged big industrial houses to diversify in different fields of production thereby leading to the concentration of economic power in their hands.

11. Foreign Collaboration. The policy of collaborating with foreign firms for starting more firms in existing industries and altogether new industries has also helped in the establishing of monopoly power and concentration of economic power in the country. A foreign firm wants to enter into collaboration only with an experienced industrial house with large financial resources and organisational ability. Natu-

big industrial houses have benefited from this. This has led them to expand further in varied lines of production thereby increasing their economic power. In certain cases, when an altogether new lines of production is started, it turns out to be 100 per cent monopoly. The Monopolies Inquiry Commission gave instances of this as the Synthetic and Chemicals producing synthetic rubber and India Foils producing aluminium foils. In some other cases, the limited size of the home market, has prevented other firms to enter the field so the firm continues to enjoy monopoly power, as in the case of antimony industry. The use of foreign patents by Indian industrialists has also led to the concentration of economic power.

12. Impact of Tax Concessions. The Government of India provides a number of tax incentives to the private sector on the growth and development of large business. Some of the tax incentives are tax holiday and exemption in respect of dividends to new industrial enterprises; depreciation allowances; development rebate; rebate on income from exports; on expenditure on scientific research; set-off and carry forward of losses; concessions rates on inter-corporate profits, etc. According to the Mahalanobis Committee (1964) while the tax concessions and rebates promoted a climate favourable to investment by both small and big enterprises, the major benefit was derived by the latter who tried to increase their economic power.

13. Formation of Holding Company. Another cause of "concentration of economic power has been the investment of funds by one corporation in acquiring assets or stocks or shares of another independent corporation. Where such investment is made a corporation in the same line of business it tends to promote...industry-wise concentration. Where the investment is made in a corporation in a non-competing line of business, it helps the growth of "country-wise concentration." When a parent company holds more than 50 per cent of the shares, it obtains control of large amounts of capital of its subsidiaries." Among the examples given by the Monopolies Inquiry Commission was that of the Amalgamations Private Ltd. which controlled six subsidiary companies. One of the subsidiaries Simpson & Co. Ltd., in turn, had 14 subsidiary companies under it.

CONSEQUENCES OF CONCENTRATION

The concentration of economic power has both social and economic consequences.

Social Consequences. The concentration of economic power is a great social evil. It has led to extreme inequalities. The rich have become richer and the poor poorer. A few roll in wealth, we luxuriously and

spend extravagantly, while the majority of the people go without sufficient food, clothing and shelter. It has developed hatred and inculcated a sense of class conflict between those who live in abysmal poverty and those who own vast industrial empires. The big business houses have also influenced the democratic machinery of the country. It is alleged that government policy is influenced by big businesses who provide funds to the ruling party during election. As the Monopolies Inquiry Commission pointed out, "The fact that such assistance has been liberally given. . . has been admitted by Government in a statement of Parliament." The Commission further pointed out that "it is the hope of favours to be received that induces such payments and after the election is over businessmen try their best to see that the investment made by them brings satisfactory return."

Further, big business houses have tended to corrupt public officials for the purpose of getting economic advantage from them. This has actually happened in the grant of industrial licences, import licences, etc.

Another social consequence of the concentration of economic power has been the emergence of a new class of the very rich which has led to social cleavages with deep-rooted social and cultural consequences. In the words of the Monopolies Inquiry Commission, "The co-existence of a small number of very rich persons or families side by side with abysmal poverty of the multitude engenders a class feeling against big business...Inevitably, the position and glamour of these very rich persons has also seriously undermined social value in the country."

Economic Consequences. The concentration of economic power has far reaching economic consequences. There has been a controversy over the question whether it has promoted or hampered India's economic growth. The Monopolies Inquiry Commission favoured the view that the concentration of economic power had helped the economic development of India. The industrial development in its early phase has been due to the adventure and skill of a few enterprising industrialists like Jamshedji Tata, Shri Ram, Karamchand Thapar, Gujarmal Modi, etc. who in the process, succeeded also in establishing big business houses "thus concentrating in their hands a great portion of the economic power controlling and directing the production and distribution of national wealth and income". Once big businesses are established they diversify in the development of other industries which lead to the further development of the economy. In the process they earn huge surplus profits after paying high dividends to the shareholders. These profits, in turn, add to the industrial capital, whether by way of issue of bonus shares or in the shape of reserves or by investment in fresh ventures. All this has led to capital formation in the private corporate sector.

Further, the big business houses have been able to supply managerial skill of high quality which has tended to increase production and profits for capital formation and has brought confidence in the industrial sector because there have been very few failures as compared to other industrialists.

Last but not the least, it is the big business houses which have been favoured by foreign companies for the purpose of collaboration. For the latter are not willing to collaborate with small units. Such collaborations have helped in establishing import-substitution and export-oriented industries with the help of foreign machinery, technical know-how and capital. Thus by collaborating with foreign concerns, big industrial houses have contributed much to the industrial development of the country.

He also does not agree with the Commission that it is the concentration of economic power has promoted the economic development of the country. R.C. Dutt, in his Note of Dissent in the Monopolies Inquiry Commission Report, holds that the economic development of the country cannot be attributed to the concentration of economic power. It is the zeal and initiative of individual pioneers in the field of industry that has contributed to the process of industrialisation in India and not the concentration of economic power. Thus the concentration of economic power as such cannot be regarded as responsible for economic development.

He also does not agree with the Commission that it is the concentration of economic power which leads to capital formation in the private corporate sector. The quantum of surplus available for further investment depends upon the operation of the big business to their optimum capacity and not on the concentration of economic power.

Again R.C. Dutt does not agree with the view of the Commission has concentration of economic power in the hands of a few big business houses has developed managerial skill of high quality. In fact, concentration has inhibited the growth of a professional class of managers at higher levels because all top positions are held by the family members and relatives of such business houses.

Besides, concentrated economic power is likely to have a number of economic evils adversely affecting the economy. There is the danger of the emergence of monopoly power lending to high price for the consumer, deterioration in quality and keeping out small entrepreneurs. The big business houses are able to compete out the small business on the basis of their financial strength by selling their products at unremunerative prices and by large scale efficient advertising. Some of the big industrialists in India own newspaper or chain of newspapers and others spend large amounts in lavish advertisements which go against

the smaller units. Further, as noted by the Monopolies Inquiry Commission, some dominant entrepreneurs use price wars and threats against small businessmen with a view to maintain their domination. Thus the elimination of the small businessmen is an economic evil of concentrated economic power which increases the imbalances in the distribution of national wealth and income which is not conducive to the economic development of the country.

Further, as pointed out by Dr Lokanathan to the Monopolies Inquiry Commission, concentrated economic power often leads to investments which are not conducive to economic development. In his words, "Concentration of economic power might lead to misdirection of investment. Although there is a licensing system which would tell me where I should invest my surplus profits, surplus sourees, in actual fact, I may not act according to that. Because, the more a person has, the more he would do as he likes."

From the above discussion, it may be concluded that the concentration of economic power is not an unmixed blessing. It has good and bad social and economic effects. To make the big business houses as an instrument of economic development, they need to be properly controlled and regulated in right channels so that they may be shorn of their evils and work towards the betterment of the economy.

GOVERNMENT MEASURES

The Government of India has adopted a number of measures to prevent growth of monopolies and concentration of economic power in the country. Some of the measures are discussed below:

1. **MRTP Act.** The first measure adopted by the Government is the Monopolistic and Restrictive Trade Practices Act of 1969. According to its latest amendments it applies to all non-government undertakings having assets of not less than Rs 100 crores each either by itself or together with its inter-connected undertakings and dominant undertakings having assets of not less than Rs one crore. Such undertakings are required to obtain prior approval of the Central Government for the establishment of new undertaking, for substantial expansion, amalgamation or merger with other undertakings, or take over of other undertakings. The Act also requires that any agreement relating to restrictive trade practices must be registered with the Registrar of Restrictive Trade Agreements. It prescribes penalties for violating the provisions of the MRTP Act.

2. **MRTP Commission.** The Government has set up a permanent three member Monopolies and Restrictive Trade Practices Commission to enforce the provisions of the MRTP Act so as to control monopolies and

to prevent and check the monopolistic and restrictive trade practices. It enquires into monopolistic and restrictive trade practices by itself or on reference made to it by any association or State or Central Government or by the Registrar. In the case of restrictive trade practices, the Commission directs the party to stop such practices, while in the case of monopolistic trade practices it makes recommendations to the Central Government for appropriate action.

3. Licensing Policy. The Monopolies Inquiry Commission (1965) and the Hazari Committee (1967) pointed out that the industrial licensing has resulted in the concentration of economic power in the hands of a few big industrial houses. To remove its defects, the Government announced the Industrial Licensing Policy in February 1970 which has been modified from time to time in keeping with the requirements for the economy. According to the existing Industrial Licensing Policy, there are 19 industries in the core sector in which big industrial houses can also establish industries besides the public sector. Moreover, all industrial units with assets of not less than Rs 100 crores are covered under large or industrial houses of the MRTP Act. Further, all new investments over Rs 5 crores have been included in the heavy investment sector. Entrepreneurs other than belonging to big industrial houses are issued licences liberally except those cases where foreign exchange considerations are involved.

4. Joint Sector. The Industrial Licensing Policy of February 1970 laid down the formation of a joint sector on the basis of equity participation between the Central-State Government and private sector. It prohibits the participation of large industrial houses and dominant undertakings. Thus the establishment of joint enterprises is a step towards reducing the concentration of economic power.

5. Public Sector. To prevent monopolies and reduce concentration of economic power, the Central Government and State Governments have been setting up public enterprises in the fields of capital, intermediate and consumer goods.

6. Encouragement to Middle, Small and Cooperative Sectors. The Government had also been encouraging the growth of industries in the middle, small and cooperative sectors in order to prevent monopolies and reduce concentration of economic power. In the middle sector, with investment between Rs 1 crore and less than 5 crores, new entrepreneurs are allowed to set up industries. Certain industries are exclusively reserved for the small sector. The cooperative sector is encouraged to produce consumer goods. The small and cooperative sectors are given liberal credit and infrastructural facilities.

7. Abolition of Managing Agency System. The Managing Agency System which had been instrumental in the concentration of economic

power and creation of monopolies are abolished in April 1970. But the managing agents have now assumed new roles as directors or managing directors and consultants to a number of companies.

8. Nationalisation of Banks and Insurance Companies. The commercial banks and general insurance companies had helped the emergence of monopolies and concentration of economic power in India because they were controlled by big industrial houses. The Government has, therefore, nationalised 20 major commercial banks and all general insurance companies so that their funds are properly utilised and not for the benefit of a few business houses.

But the MRTP Amendment Act of 1984 by extending the exemption to the cooperative societies from the purview of the unfair trade practices is a regressive step. To keep them out of the reach of the MRTP Act is to leave the consumer without any protection from a large chunk of products of daily use which are marketed by them. The Act does not confine the exemption limit to cooperative societies only of the actual products but gives a blanket protection to any cooperative society. Therefore, private firm which converts itself into a cooperative society will immediately get out of the purview of the MRTP Act. Such a situation will lead to serious consequences.

Chapter 83

SEVENTH FIVE-YEAR PLAN, 1985-90

The Seventh Five-Year Plan was formally launched with the budget for 1985-86. The Plan Report was released by the Planning Commission on 9 November 1985. The Seventh Plan envisages an aggregate outlay of Rs 3,48,148 crores. Of this, the public sector outlay has been estimated at Rs 1,80,000 crores and the balance of Rs 1,68,148 crores in the private sector. The Plan aims at a growth rate of 5 per cent a year in GDP at factor cost.

OBJECTIVES AND STRATEGY

The basic objectives of Indian planning have been growth, modernisation, self-reliance and social justice. Within this framework, the Seventh Plan lays down three more immediate objectives of: (a) accelerating the growth in foodgrains production; (b) increasing employment opportunities; and (c) raising productivity. The achievement of these objectives is closely linked with the problems of poverty, unemployment and regional imbalances.

An increase in foodgrains production is an important objective of the Seventh Plan. This will be achieved through increase in cropping intensity made possible by increased availability of irrigation facilities, extension of new agricultural technologies to low productivity regions and to small farmers. The strategy pays special attention to increasing the production of food grains, edible oils, etc. Since any shortfall in foodgrains production will tend to reduce rural incomes and generate inflationary pressures, an expanded food security system, based on rapid increases in foodgrains production especially in the underdeveloped regions, public procurement, buffer stocking, and public distribution, is a key component of the Seventh plan.

The second immediate objective of the Plan is the *generation of productive employment*. The major employment generation activities will be found in agriculture, rural development, village and small scale industries, construction, public administration and other services. Rapid agricultural development in backward areas where there is considerable

¹G.O.I., Planning Commission, *Seventh Five Year Plan, 1985-90*, Vol I and II, 1985.

unemployment, expansion of irrigation, more intensive cropping and specific employment programmes such as NREP and RLEGP would contribute significantly to the generation of employment in rural areas. A faster growth rate of industry, changes in the pattern of industrial growth, and expansion of labour-intensive construction activities for providing housing, urban amenities, roads and rural infrastructure would together generate more employment in the non-agricultural sector.

The third immediate objectives of the Seventh Plan is to raise productivity. The Plan places particular emphasis on obtaining more output out of assets that have been built up over the years. For this, improvements in capacity utilisation and efficient project implementation in all areas, especially in irrigation, power, transport and industry are essential.

The Plan requires the development and introduction of new technologies in several sectors of the economy. It envisages the implementation of a set of science and technology missions in which domestic technological capabilities would be fully developed to achieve well-defined goals. At the same time, in other areas, access to relevant foreign technologies will be improved along with emphasis on adequate absorption and development. The Plan aims at extending the green revolution to new areas through its emphasis on raising the productivity of rice in the eastern region and in rainfed and dryland agriculture. This would lead to faster growth in agricultural output in areas which are economically backward. The strategy of human resources development will also help in correcting regional imbalances.

STRATEGY OF THE PLAN

The development strategy of the Seventh Plan aims at a direct attack on the problems of poverty, unemployment and regional imbalances. It requires for its success substantial improvements and economy in resource use. These "will be achieved through the accelerated development of human resources, greater selectivity in the development and use of domestic technological capabilities, the widespread induction of new technologies in our farms, factories and offices, stronger emphasis on capacity utilisation and better project implementation and the pursuit of policies that would cut down costs of production particularly in the industrial field."

The Seventh Plan stipulates the growth rate of 5 per cent in GDP at factor cost over the Plan period. The growth rate of agricultural output is estimated at 4 per cent, of minerals and industrial goods at 8.3 per cent, of electricity, gas and water supply at 12 per cent, and of transport services at 8 per cent annually.

To achieve these growth rates, the Plan will require a total investment of Rs 3,22,366 crores of which 94 per cent will be financed from domestic resources. The rate of domestic savings is expected to rise from 23.3 per cent of GDP in 1984-85 to 24.5 per cent in 1989-90 and the rate of gross investment from 24.5 per cent of GDP in 1984-85 to 25.9 per cent in 1989-90. The ICOR is expected to be around 5 in the Seventh Plan. The share of the public sector in total investment over the Plan period will be 48 per cent (Rs 1,80,000 crores). The private corporate sector will account for 17 per cent and unincorporated enterprises and households for 35 per cent of the total investment.

In allocating investable funds in the public sector, areas where the rates of return are higher or the needs of additional capacity are more immediate have been given preference over new projects which will yield output only after the Seventh Plan. Second, more emphasis has been laid on increases in productivity of the existing capital stock through investment in replacement, balancing equipment, and modernisation. Finally, an attempt has been made to ensure balance among the infrastructure sectors, the rest of the production sectors and the sector of human resource development including poverty alleviation programmes.

Besides the strategy outlined above, there are some more planks of the Seventh Plan strategy relating to the other sectors of the economy. They are discussed in the light of sector-wise allocation of public sector outlays during the Plan, as shown in Table 83.1.

TABLE 83.1. SECTORAL OUTLAYS OF THE SEVENTH PLAN

Sl. No.	Sector	Total	Rs crores Per cent of Total
1.	Agriculture and allied	39771.18	22.09
2.	Energy	54821.26	30.45
3.	Industry and minerals	22460.83	12.48
4.	Transport	22971.02	12.76
5.	Communications	6472.46	3.60
6.	Science and technology	2466.00	1.37
7.	Social services	29350.46	16.31
8.	Others	1686.79	0.94
		180000.00	100.00

Agricultural Development and Irrigation. The Seventh Plan allocates 22 per cent of the total outlay for the development of agriculture and irrigation. The agricultural sector is expected to grow at an average

annual rate of 4 per cent in terms of gross output and 2.5 per cent in terms of value added. In order to achieve these growth rates, the plan envisages that a substantial part of the additional production will come from small and marginal farmers and from rainfed and dryland areas. It also envisages a special effort for a break-through in rice production in rice growing areas of Eastern and Southern India. The other associated aspects of the agricultural strategy are a substantial increase in the area under high yielding varieties, increased consumption of chemical fertilisers, strengthening of the institutional arrangements for timely delivery of key inputs, intensifying pest and disease surveillance arrangements and timely control operations, and strengthening of the existing network on the pattern of training and visit system for quick and effective transfer of technology to the farmers.

For achieving higher agricultural growth and for reducing poverty and unemployment, another aspect of the strategy is the effective implementation of land reforms. For this, efforts will be stepped up during the Plan to strictly enforce the existing legislation relating to ceiling on land holdings, especially in newly irrigated areas, and security of tenure. Besides updating of land records the work on consolidating of land holdings will be intensified.

One of the important elements of the agricultural strategy is the rapid expansion of irrigation facilities. For this, the emphasis will be on early completion of on-going schemes and on speeding utilisation of potential created by improvement in water management. New schemes will be limited to medium irrigation schemes in drought prone, tribal and backward areas and to minor irrigation schemes.

Energy. The Seventh Plan gives the highest priority to energy by allocating 30.4 per cent of the total outlay on its development. The main elements of the energy strategy of the Plan are. (i) accelerated exploitation of coal, hydro and nuclear power; (ii) intensification of exploration for oil and gas; (iii) advance policy planning for the large emerging gas potential; (iv) management of oil demand including formulation of a national transport fuel policy; (v) energy conservation including inter-fuel substitution; (vi) increasing the productive efficiency of capacities already created and of equipment used; (vii) exploitation of renewable sources of energy like energy forestry, bio-gas, biomass, wind, solar energy, etc. especially to meet the energy requirements of rural communities; (viii) intensification of research and development in all energy resources and in particular, in emerging energy technologies; and (ix) wide public explanation, discussion and acceptance of energy strategy to insure its successful implementation.

Industry and Minerals. The Seventh Plan allocates 12.5 per cent of the total outlay on the development of industries and minerals. Their

output is estimated to increase at the rate of 8.3 per cent per annum over the Plan period. The industrial strategy to achieve this growth rate is to (a) improve infrastructural facilities particularly power; (b) pay greater attention to modernisation and maintenance of assets; (c) upgrade technology; (d) improve productivity; (e) reduce costs and improve competitiveness; (f) introduce new products; and (g) accelerate development in selected industries in which the country has comparative advantage. Besides, there will be greater emphasis on productivity, improved capacity utilisation, easy availability of intermediates and greater scope for initiative and increased production resulting from recent changes in industrial, trade and fiscal policies. Lastly, structural reforms will be made in the management of public enterprises so that they can meet production targets and also generate adequate internal resources for their expansion.

Transport and Communication. Transport and communications have been allocated 16 per cent of the total outlay in the Seventh Plan. The strategy of transport development lays emphasis on: (1) the replacement of the overaged assets in a phased manner; (2) the modernisation of the transport infrastructure with new technologies; (3) the maximum utilisation of the existing assets and capacity through higher productivity by making technological improvement; (4) the completion of essential on-going works; (5) the conservation of energy, particularly, diesel; (6) the reduction of transport effort by inter-related policy measures like dispersal of industries, balanced regional development and rational land use planning; (7) the promotion of multimodel transport operations through introduction of container services, etc.; (8) the maintenance of cost-based price structure and improvement of the financial viability of undertakings.

The development of the communications sector has a five-pronged strategy: (1) balanced growth in net-work; (2) rapid modernisation; (3) a quantum jump in technology; (4) increased productivity; and (5) innovations in organisations and management.

Science and Technology. The Seventh Plan lays special stress on the development and use of S&T in almost all spheres of the economy. As such, it allocates 1.4 per cent of the total outlay to it. The strategy for the development and spread of S&T lays emphasis on making science and technology an essential and integral part of all major socio-economic sectors, developing capabilities essential for fulfilment of S&T tasks in these areas, and undertaking Science and Technology Missions that are well-defined.

Social Services. The Seventh Plan gives high priority on human resource development, and raising the quality of education and health care service for general development. As such, it allocates more than 16

per cent of the total outlay for the development of social services.

The strategy in the field of education is to cover 92 per cent of the population in elementary education during the Plan. Special efforts will be made to improve the quality of education. In the field of health, the strategy is to make the infrastructure for primary health fully operational with regard to village health guides, sub-centres, primary health centres and multipurpose health workers. Programmes for the control of communicable diseases, of health services and of health education will be fully strengthened. The Plan envisages universal immunisation. The family welfare programme aims at increased emphasis on female education, and maternal and child health services.

The strategy for human resource development also requires the provision of adequate drinking water facilities for the entire population both in urban and rural areas and sanitation facilities for 80 per cent of the urban population and 25 per cent of the rural population.

FINANCING THE PLAN

The Seventh Plan envisages a total outlay of Rs 3,22,366 crores. Out of this, Rs 1,54,218 crores (48 per cent) are estimated to accrue from the public sector and Rs 1,68,148 crores (52 per cent) from the private sector. Of the total outlay, Rs 3,02,366 crores at 1984-85 prices are expected to be financed through domestic savings and Rs 20,000 crores from foreign savings. We discuss below the financial resources of the

TABLE 83.2. ESTIMATES OF FINANCIAL RESOURCES FOR THE PUBLIC SECTOR PLAN, 1985-90

Sl. No	Item	Amount (Rs crores at 1984-85 prices)	Per cent of Total
1.	Balance from current revenues at 1984-85 rates of taxes (-)	5,249	(-2.9
2.	Contribution of public enterprises	35,485	19.7
3.	Market borrowings (net)	30,562	17.0
4.	Small savings	17,916	10.0
5.	State provident funds	7,327	4.0
6.	Term loans from financial institutions	4,639	2.6
7.	Miscellaneous capital receipts (net)	12,618	7.0
8.	Additional resource mobilisation	44,702	24.8
9.	Net capital inflow from abroad	18,000	10.0
10.	Deficit financing	14,000	7.8
	Total	1,80,000	100.0

public sector Plan. The aggregate resources for financing the public sector outlay in the Seventh Plan amount to Rs 1,80,000 crores at 1984-85 prices comprising investment of Rs 1,54,218 crores and current outlay of Rs 25,782 crores. The details of the estimates are given in Table. 83.2.

The scheme of financial resources shows that 82.2 per cent of the total resources required for financing the Plan have been estimated from budgetary resources, 10 per cent from external resources and 7.8 per cent from deficit financing. Details of the various resources are discussed below:

Balance from Current Revenues. The aggregate balance from the current revenues of the Central and State Governments, after meeting their current non-Plan expenditure, has been estimated at (-) Rs 5,249 crores at 1984-85 rates of taxation. The total revenue receipts of the centre at 1984-85 rates of taxation have been estimated at Rs 1,38,399 crores for the Seventh Plan period, after transferring to the States their share in the Central taxes. The non-Plan revenue expenditure has been estimated at Rs 1,50,410 crores, thus leaving a negative balance of Rs 12,011 crores for the Plan. On the other hand, the combined revenue estimates of all the State Governments for the Seventh Plan period have been estimated at Rs 1,41,124 crores at 1984-85 rates of taxes and fees. As against this, the non-Plan revenue expenditure for the same period is estimated at Rs 1,34,362 crores. Thus, a net balance of Rs 6,762 crores from current revenues is likely to be available for financing the Plan in the State sector. Taking this figure of Rs 6,762 crores alongwith a negative balance of Rs 12,011 crores of the Centre, leaves the aggregate balance of (-)Rs 5,249 crores from the current revenues during the Seventh Plan.

Contribution from Public Enterprises. The gross surplus of public enterprises (retained profit plus depreciation) on the basis of 1984-85 rates of tariffs, fares and product prices, has been estimated at Rs 35,485 crores. These estimates include Rs 4,225 crores from Railways; Rs 1,729 crores from Posts and Telegraphs; Rs 31,500 from other Central enterprises; and Rs 15 crores from State enterprises excluding State Electricity Boards and State Road Transport Corporations. State Electricity Boards and State Road Transport Corporations taken together are expected to incur cash losses at Rs 1,984 crores during the Seventh Plan.

Net Market Borrowings. The net market borrowings have been estimated at Rs 36,108 crores for the Plan period. This estimate is based on the assumption of a reasonably buoyant growth in the deposits of commercial banks through branch expansion and other measures, and a significant increase in the investible resources of other subscribers like

Life Insurance Corporation and Employees' Prudent Fund.

Small Savings. The contribution of small savings over the Plan period has been estimated at Rs 17,916 crores. This estimate has been based on the growth of households' contribution to small savings as well as to the Employees' Provident Funds and other prudential funds in the private sector as observed from past trends.

State Provident Funds. Net accruals to State Provident Funds for the Seventh Plan have been estimated at Rs 2,300 crores for the Centre and Rs 5,027 crores for the States in the light of past trends, existing rates of contribution and anticipated increase in employment under the Central and State Governments.

Net Miscellaneous Capital Receipts. The net miscellaneous capital receipts for the Centre and States have been estimated at Rs 12,618 crores. This item represents the net balance of receipts and disbursements under a number of budget heads.

Term Loans from Financial Institutions. The term loans from financial institutions have been estimated to provide Rs 4,639 crores during the Plan period. The financial institutions like Life Insurance Corporation, General Insurance Corporation, Rural Electrification Corporation and National Bank for Agriculture and Rural Development are estimated to extend loans amounting to Rs 3,539 crores to the States for various programmes in the fields of housing, water supply, power, transport and agricultural cooperatives. Further, Industrial Development Bank of India under its Bills Rediscounting Scheme is expected to provide Rs 1,100 crores for the State Plans.

Additional Resource Mobilisation. The additional resource mobilisation by the Centre and the States has been estimated at Rs 44,702 crores for the Seventh Plan. In this, the Centre's share is expected to be Rs 22,490 crores. Of this amount, Rs 8,250 crores is likely to be raised through tax and non-tax revenue measures and Rs 14,240 crores are expected from Central public enterprises including Railways and Posts and Telegraphs. For financing the State Plans, the States are expected to mobilise additional resources totalling to Rs 22,212 crores. Of this, they are expected to raise additional resources of Rs 13,000 crores through various tax and non-tax revenue measures. Despite the commercial losses of the State Electricity Boards and State Road Transport Corporations, they are expected to adopt suitable measures to raise net additional revenue of Rs 7,000 crores and Rs 2,200 crores respectively over the Seventh Plan. Similarly, receipts from multipurpose, major and minor irrigation works are expected to net Rs 12 crores after covering their working expenses.

Net Inflow of Capital from Abroad. The net flow of external assistance has been estimated at Rs 18,000 crores at 1984-85 prices.

Deficit Financing. The resource mobilisation scheme of the Plan leaves an uncovered gap of Rs 14,000 crores which is proposed to be covered through deficit financing.

A Critical Appraisal of the Seventh Plan

The Seventh Plan is not basically different from the last two Plans in terms of its objectives or strategy. It "is a mix of hard targets, soft projections, fine intention and rosy promises."¹ As such, doubts have been expressed about fulfilling the physical and financial aspects of the Plan. We discuss these as under:

Growth Rates. The Seventh Plan sets an annual growth rate of 5 per cent of GDP, given ICOR of 5. This is the same as achieved during the Sixth Plan. It cannot, therefore, be said to be ambitious. But "the question is whether the growth target is sustainable, particularly because apart the uphill task of accelerating agricultural growth, the lag in the growth of the industry has to be made good. These considerations point to a size of the plan which is large; but it must also be supported by adequate resources."²

The Plan assumes an annual growth rate of 4 per cent of agricultural output. This target is again the same as achieved during the Sixth Plan. But the average rate of growth in agriculture has been around 2.6 per cent per annum over the past thirty five years. The Plan document notes: "It has also been estimated that the growth of agricultural output in the recent past has not been commensurate with the increase in inputs, indicating a decline in productivity of inputs." But the critical input for agriculture is water. So long as irrigation facilities are not increased and dependence on vagaries of weather not removed, it is not possible to raise productivity of inputs like fertilisers, HYV seeds, etc. Thus the growth rate of 4 per cent of agricultural output is on the high side.

The annual growth rate of industrial output has been fixed at 8.3 per cent. This is again on the high side because the growth rate achieved during the Sixth Plan was 5.5 per cent which was ever lower than the average growth rate of 7 per cent witnessed in the past thirty-five decades.

Capital-Output Ratio. The Seventh Plan assumes the capital-output ratio of 5. But some recent studies show that the capital-output ratio is increasing in all sectors of the economy and it would work out around 6. It means that to meet the targets of production of the Seventh Plan, the

¹S. Guhan, *Seventh Plan: Hard Targets and Soft Projections*, *The Economic Times*, 11 December 1985.

²The Editorial, *Plan Arithmetic*, *The Economic Times*, 12 November 1985.

non-inflationary manner as also to stimulate growth, productivity and savings." Despite these sound criteria, the Plan contains no reference to its not adding to the regressive effects of the resources to be raised, which bear heavily on the poor. The case for reducing tax rates is reaffirmed without any empirical support about its producing increased revenues.⁴ The Plan document states that direct taxes of the centre and the States as percentage of non-agricultural GDP has steadily declined over the period 1975-76 to 1983-84 and this trend needs to be reversed. It pleads for raising the aggregate tax ratio from 16.3 per cent of GDP in 1984-85 to 18.3 per cent in 1989-90 for the success of the Plan. But no specific measures have been put forth except such pronouncements as taxing untaxed rural incomes, rationalisation and simplification of the tax structure, changes in tax-rates, reduction in tax evasion, etc.

The Central public sector enterprises including railways are expected to contribute additional Rs 14,240 crores to the financing of the Plan. The recommendations to turn the Seventh Plan loss of Rs 11,757 crores of State Electricity Boards into a surplus of Rs 7,000 crores, the loss of Rs 1,434 crores of State Transport Corporations to a surplus of Rs 2,200 crores and similar suggestions on irrigation rates are not backed by specific action suggestions except for transport undertakings. Malcolm Adiseshiah concludes that the financing section is sound advise, but its execution raises the king of issues just referred to.

The estimate of Rs 18,000 crores as *net inflow of capital from abroad* is highly optimistic. It is based on projections of imports, exports, current invisibles and capital transactions. At 1984-85 rates, imports are expected to grow at 5.8 per cent and exports at 6.8 per cent annually. The Plan document outlines specific measures to increase exports but it is silent about measures to reduce imports. However, it admits that "debt service obligations will rise more sharply because of harder average terms of external debt, including commercial borrowing contracted in recent years, repayments to the IMF, and a substantial fall in concessional aid flows." Under the circumstances, the prospect of the net inflow of capital from abroad to the time of Rs 18,000 crores during the Seventh Plan is gloomy.

The uncovered gap of Rs 14,000 crores in the financial schemes of the Plan is proposed to be covered through *deficit financing* which comes to 7.8 per cent of the total resources. This is considered to be within safe limits by the Planning Commission. But the past experience belies this hope and the deficit is likely to be much higher than anticipated due to shortfalls in other sources of financing the Plan and would stimulate

⁴Malcolm. S. Adiseshiah, *The Seventh Plan—A Positive Impression*, *The Economic Times*, 29 November 1985.

inflationary pressures within the economy.

Thus the resources crunch is likely to be a matter of concern for the planners during the Seventh Plan. As the *Economic Survey* for 1984-85 pointed out: Among other things, *first* the prospects for external assistance do not appear promising; *second*, tax revenues are not rising at a rate which is sufficient even to meet increases in non-plan expenditure because of items such as defence, interest payments and subsidies (constituting 75 per cent of the non-Plan expenditure of the Centre); *third*, severe limitations on generation of resources by public sector; *four*, possibilities of external borrowing on concessional terms strictly limited; *five*, unrelenting increase in population at 2 per cent; *six*, difficulty in maintaining increased crude oil production and need to arrest the steady erosion in India's share in the world export trade. It, therefore, emphasises that a marked improvement in the resources position would be required if the country is to achieve the increases in development expenditure necessary in the Seventh Plan without jeopardising price stability.

Chapter 84

PERFORMANCE OF INDIAN PLANS

India embarked on the path of planned economic development on 1 April 1951. Since then, she has gone through six five years Plans and the Seventh Five-Year Plan is in operation. There are various objectives that run through one or the other Plan. They are: (i) to increase national income and per capita; (2) to raise agricultural production; (3) to industrialise the economy; (4) to achieve balanced regional development; (5) to expand employment opportunities (6) to reduce inequalities of income and wealth; (7) to remove poverty, and (8) to achieve self-reliance. In a broad sense, these specific objectives can be grouped into four basic objectives: growth, modernisation, self-reliance and social justice. We critically evaluate the performance of Indian Plans in the light of these objectives.

1. Growth

The overall growth rate of the economy has been characterised by extreme variations from year to year. Consequently, the targets of growth rates fixed for the various Plans have not been achieved except for the First, Second, Fifth and Sixth Year Plans. In the First Plan, the growth rate of 3.6 per cent per annum was achieved which was higher than the estimated growth rate of 1.2 per cent. During the Second Plan also the actual growth rate was 4 per cent as against the targeted growth rate of 2.5 per cent. In the Third Plan, the actual growth rate of 2.2 per cent was much lower than the targeted rate of 5.6 per cent. The Fourth Plan also showed a large decline in the actual growth rate which was 3.4 per cent against the estimated rate of 5.7 per cent. But the Fifth Plan achieved a higher growth rate of 5.2 per cent against the targeted rate of 4.4 per cent. The Sixth Plan had set the target growth rate of 5.2 per cent which was achieved. During these years, the long term trend of growth of national income at constant prices worked out to only 3.7 per cent per annum while the per capita income recorded an annual increase of only 1.3 per cent.

However, the Indian economy has witnessed a significant increase in the saving and investment trends over the plan periods. Saving as percentage of GDP increased from 10 per cent in 1950-51 to 23.3 per cent in 1984-85 and investment (gross capital formation) as percentage

of GDP from 10 per cent to 24.5 per cent over the period. We have seen above that one of the weaknesses in the Indian planning process has been the slow growth rate of the economy and high rate of capital formation. This reflects a paradoxical situation. The reasons for this are not far to seek.

The growth rate of the economy is determined by trends in agricultural and industrial production in India. The trend growth rate of agricultural during 1950-51 to 1978-79 was 2.7 per cent. During the Sixth Plan, the growth rate of agriculture was 4.3 per cent per annum. The principal problems from the point of view of agricultural growth have been: "(a) the uneven rate of agricultural progress in various regions leading to considerable regional disparities in the level and pace of development; (b) the wide amplitude of yearly fluctuations in agricultural production; (c) the stagnation in production of several important crops like pulses and oilseeds; (d) the need for technologies, services and public policies that can help ecologically disadvantaged regions and also promote greatest labour absorption; and (e) the inadequacy of institutional framework for enhancing the productivity of small farmers and for producer-oriented marketing."

Between 1950-51 and 1984-85, the annual growth rate of Industrial production was about 7 per cent. But it was not uniform. It was 8 per cent during 1951-65 which slowed down to 3.4 per cent in 1965-70, 3.7 per cent in 1970-75, 4.8 per cent in 1975-80 and about 6 per cent in 1980-85. Many constraints have been identified both on the demand side and the supply side for the deceleration in the growth rate since 1965. The factors on the demand side have been: demand deficiency due to a significant decline in the scope for import substitution, inflationary pressures, and the failure of the domestic demand for manufactured goods to increase due to the worsening of income distribution. The principal factors on the supply side have been: the slow growth of agricultural productivity restricting the supply of raw materials, the inadequate expansion of infrastructural facilities, deceleration of public sector investment, the movement of terms of trade against industry, the foreign exchange constraint, the licensing, taxation and credit policies adversely affecting the private sector, etc.

Besides, an other factor which has been keeping growth rate of income low despite high saving and investment rates has been high capital-output ratio over the planning period. The capital-output ratio reflects the quantum as well as productivity of investment. The figures of high capital formation do not represent the real picture of the economy because they are in 'gross' terms and not in 'real' terms. Further, they are at market prices and not at constant prices. Thus there has been a shortfall in real investment in the public sector especially due

to price escalation that has led to shortfall in targets of growth rate during every Plan. Another cause for this shortfall in public investment has been inadequate return from past investment in power, irrigation, transport and public sector manufacturing industries, and shortfalls in public sector savings.

The effect of this shortfall in the quantum of public investment has been aggravated by high capital-output ratio than anticipated in the Plans. The marginal gross capital-output ratio at 1970-71 prices was about 4 per cent in the Second and Fifth Plans and 5.4 and 5.7 per cent in the Third and Fourth and Sixth Plans respectively. Such high capital-output ratios can be attributed to changes in the composition of investment from engineering to chemical industries, rising real costs in such sectors as power, irrigation and mineral development, and inefficiencies in the utilisation and maintenance of existing capital stock.

Thus the paradox of high capital formation and low growth rate of income is the result of high capital-output ratio, both total and sectoral. It is, in fact, this relationship combined with high population growth rate that has been responsible for the existence of proportion of population below the poverty line.

2. Modernisation

Modernisation refers to "a variety of structural and institutional changes in the framework of economic activity. A shift in the sectoral composition of production, diversification of activities, an advancement of technology and institutional innovations have all been part of the drive to change a feudal and colonial Indian economy into a modern and independent entity.

National Income. The sectoral distribution of national income reflects the structural transformation of Indian economy. The composition of NDP shows significant changes over the period 1950-51 to 1984-85. In 1950-51 (at 1970-71 prices), 61.5 per cent of the NDP originated in the primary sector which dropped to 38.2 per cent in 1984-85. This is a concomitant result of the development process whereby the primary sector gives place to the secondary sector and tertiary sectors of the economy. Consequently, the relative share of the secondary sector increased from 14.5 per cent in 1950-51 to 21.6 per cent in 1984-85; while the share of the tertiary sector increased from 19.5 per cent to 40 per cent over the period. This pattern of structural transformation of the Indian economy is disturbing because the secondary sector has not been expanding fast enough to absorb the growing rural labour force. The fast expanding tertiary sector has been able to absorb skilled and trained labour force. The unskilled and uneducated rural labour force has continued to struggle in the primary sector.

Industry. The main component in the drive for structural diversification has been towards modernisation and diversification of industries. Over the past 35 years, India has achieved a broad-based industrial development. Apart from quantitative increases in the output of industrial products, the industrial structure has been widely diversified covering the entire range of consumer, intermediate and capital goods. Chemicals, engineering, transport, petrochemicals, synthetics, electronics, etc. have made rapid strides. In most of the manufactured products, the country has achieved a large measure of self-reliance. This is reflected in the composition of the country's foreign trade in which the share of manufactured goods in imports has steadily declined. On the other hand, industrial products of wide range have become a growing component of our exports. Rapid industrialisation has been accompanied by a corresponding growth in technological and managerial skills, not only for operating highly complex and sophisticated industrial enterprises but also for their planning, design and construction. Considerable progress has also been made in industrial research, and in absorbing, adapting and developing industrial technology.

Besides, the development of the public sector has made a major contribution in the modernisation of Indian economy. It has played a dominant role in the establishment of such heavy industries as steel, petrochemicals, non-ferrous metals, petroleum, fertilisers, heavy engineering, heavy electricals, etc., thereby diversifying India's industrial structure. Its contribution to the GDP was 11 per cent in 1960-61 which increased to 25 per cent in 1984-85.

Modernisation and structural change in the industrial sector is also reflected in the vast expansion of the private sector both in the large and small scale sectors through the development of a network of banking institutions and money market. Besides, a variety of institutions have been set to provide infrastructure, raw material, marketing and technologies to the small scale sector.

But these impressive achievements do not reveal the true picture of industrial development of the economy. Judged by the growth rates, India's industrial performance has been below the expected growth rate of 8 to 10 per cent per annum. The average annual growth rate of industrial production was about 7 per cent between 1950-51 to 1984-85. But it was highly unstable. It was 8 per cent during 1961-65 which slowed down to 3.4 per cent during 1965-70, 3.7 per cent during 1970-75, 4.8 per cent during 1975-80, and rose to about 6 per cent in 1980-85.

The pattern of industrial development in India has been uneven with the majority of industries concentrated in urban areas, especially around big cities. Inter-state and intra-regional disparities continue to exist. Besides, the small scale sector has failed to develop to the extent

the various institutional facilities are being provided to it, Industrial sickness has been quite high and capacity utilisation in a number of basic and other industries has remained at a low level. A substantial technological gap still exists in major industries. Industries like textiles and steel need modernisation and productivity improvement, and the capital goods industry requires product development.

Agriculture. Modernisation and structural change in agriculture have played an important role in the process of planned development. Zamindari and other intermediary tenures have been eliminated. The country has made rapid strides in the production of foodgrains, cash and horticulture crops to meet the consumption requirements of the growing population, raw material needs of the expanding industry and for exports. For instance, the output of foodgrains has increased from about 51 m tonnes in 1950-51 to 146.5 m tonnes in 1984-85. There has been a phenomenal increase in the production of wheat from 6 m tonnes in 1950-51 to more than 44 m tonnes in 1984-85. The increase in the output of foodgrains by about three times has been due to the spread of high-yielding varieties of inputs; extension of irrigation facilities and water management programmes; establishment of a system of support prices, procurement and public distribution; promotion of agricultural research, education and extension; and institutional and organisational arrangements to assist small and marginal farmers, share croppers and other weaker sections. Besides, there has been diversification of allied agricultural activities such as horticultural crops like apples, mangoes, oranges, etc. and animal products like milk, eggs and fish.

But these achievements conceal substantial year to year variations in agricultural production caused by exogenous forces like droughts, floods, etc. No doubt, the total agricultural output has increased, but there has been stagnation or nominal increase in the production of several crops like jowar, bajra and pulses among foodgrains, and groundnut and sesamum among oilseeds, and jute. There are inter-regional and intra-regional differences in soil fertility, flood control and drainage system, irrigation facilities and rainfall. Moreover, "marked cropping pattern imbalances have begun to emerge in the agricultural sector largely as a result of technological improvements in certain crops, the expansion of irrigated area, and the effective intervention by the Government to support wheat and rice prices."¹ On the whole, the trend growth of agricultural production has not been satisfactory. It was 2.7 per cent during 1950-51 to 1978-79 and the same trend continued during the Sixth Plan.

Infrastructure. Rapid growth of agriculture and industry is crucially

dependent on the expansion of the key infrastructure sectors like coal, power, petroleum and transport. The base for these sectors was laid in the Second Plan and production became significant in the Third Plan. Between 1965-66 and 1984-85, the production of coal increased by 118 per cent, power generation by 376 per cent, and petroleum refinery throughput 279 per cent.

This impressive growth of the three key infrastructure sectors does not reveal their true state of affairs. Their supply of output and services has been lagging behind demand due to the non-fulfilment of plan targets.

Transport has recorded a substantial growth over the period 1950-51 to 1984-85 both in the spread of network as well as in the output of the system. Railways have recorded a growth rate of 4.3 per cent in freight traffic and 3.7 per cent per annum in passenger traffic. The traffic at major ports has increased at the rate of 5.2 per cent per annum. Domestic airlines passenger traffic has recorded a growth rate of 10.5 per cent per annum. Road transport fleet has increased by 6.8 per cent per annum in respect of trucks and 5.4 per cent in respect of buses. The road network has expanded at an annual rate of 5.4 per cent. Shipping tonnage has increased at the rate of 11 per cent and coastal at 1.4 per cent per annum.

Despite this impressive growth in the spread of transport network, a large number of villages in the country still do not have road connections. About 36 per cent of the villages were without a road link and about 65 per cent without all weather access roads at the end of the Sixth Plan. In fact, the entire transport system continues to fall short of demand for transportation. There have been capacity constraints in several areas. Inadequacy of capacity and substandard infrastructure have led to excessive transit delays, fuel wastage and higher operating costs in road and rail transport. In the case of sea-borne traffic, port infrastructure has lagged behind changes in shipping technology and cargo handling methods.

However, with the significant emphasis given to science and technology in the five year Plans, a wide-based infrastructure covering a broad spectrum of disciplines and capabilities has been built up in the areas of agriculture, atomic energy, new and renewable sources of energy, space technology, biotechnology, industrial research, oceanography, environment etc.

Social Services. Modernisation is also reflected in the spread of social services. There has been a significant increase in development expenditures whose share in GDP grew from 3 per cent in 1950-51 to 14 per cent in 1984-85. There has been a marked expansion of health services. The number of doctors, nurses and hospitals has increased. Villages have been electrified. Drinking water has been supplied to

in 1984-85. However, there has been a substantial reduction in import dependence in foodgrains over the Planning era. Net imports of foodgrains have declined from about 4 in tonnes in 1970 to 0.32 in tonnes in 1985.

Import substitution is another measure towards a self-reliant economy. India has been following this policy in the form of domestic production of consumer goods of all types, including foodgrains, capital goods, intermediate goods and the development of research and technology indigenously. She has achieved a large measure of success towards this direction and have started exporting a variety of durable consumer goods and capital goods which she used to import earlier.

In absolute terms the value of India's imports and exports has increased at a high pace. For instance, the value of exports increased by about 8 times in 1984-85 over 1970-71 and that of imports by about 10 times.

Further, India's net terms of trade have been unfavourable since 1974-75 thereby showing that India has been losing on foreign trade. The net terms of trade declined to 92 in 1974-75 from 149 in 1972-73 which fell to all time low of 81 in 1980-81, and then rose to 120 in 1983-84. Moreover India's exports as a percentage of the world exports has been hardly 0.5 per cent for over a decade. It shows that despite our concentrated efforts towards export promotion, the country has not been able to increase its exports.

Thus we find that on all counts, the goal of self-reliance is still a distant dream.

4. Social Justice

The objective of social justice as laid down in Indian Plans has many dimensions; to improve the living standards of the poorest people, to remove poverty and unemployment, and reduction in inequalities of income and wealth. All these aspects are mutually inclusive. To achieve social justice, a number of poverty alleviation and employment pro-

grammes such as DPAP and DDP which aim at optimum utilisation of land, water and livestock resources, farm forestry, dairy development and development of subsidiary occupations in drought-prone and desert areas to raise the incomes of the weaker sections of the society. In the third category are included such employment generation programmes as NREP, RLEGP, TRYSEM and FWP which aim at creating supplementary employment opportunities during lean employment periods.

of the year. Fourth, there is the Minimum Needs programme which aims at improving the consumption levels of the poorer sections in order to raise their productive efficiency. Lastly, the other measures for achieving social justice have been land reforms, abolition of bonded labour, liquidation of rural indebtedness, fixation of minimum wages for farm labour, drive against economic offenders and measures towards reduction of concentration of incomes, wealth and economic power.

Conclusion. But all the programmes discussed above have over the years achieved their objectives only partially. According to Government estimates, 40 per cent of the beneficiaries managed to increase their income above Rs 3,500 a year per family in 1984 alone. This amount being the 1979-80 poverty line per family. But this estimate is on current prices without making adjustment for the price rise since 1979-80. Dr Nilkanth Rath in his Dr T.A. Memorial Lecture said that less than 10 per cent of the poor against the 20 per cent target had been raised above the poverty line under the IRDP during the Sixth Plan without creating any durable community assets. But this was also a gross overestimate because it ignored the price rise and bank loan repayment during the Plan.

Therefore, the pace and manner in which the problem of social justice has been dealt with so far leaves much to be desired both qualitatively and quantitatively. Only a small fraction of the rural poor has been covered effectively by these poverty alleviation programmes. A sizeable portion of those covered have some land. The landless and the rural artisans have been almost left untouched.

In the area development programmes, little has been done in soil and water conservation, afforestation and pasture development. Agronomic practices and cropping patterns have not been introduced in backward regions. Marginal lands continue to be overexploited through crop husbandry. The emphasis of these poverty alleviation programmes is more on expenditure incurred than on performance. The constraints from which these programmes suffer have not been financial but organisational inadequacy and lack of clear cut plan of development and proper monitoring. Little attention has been paid to psychological, political, bureaucratic and economic forces that have been at work to foil these programmes.

The minimum needs programme did improve the living conditions of the poor in rural areas through the provision of protected and assured water supply to 1,92,000 villages with a drinking water problem, house sites to 5.4 million poor rural families, and assistance for house construction to 1.9 million of them by 1984-85. Environmental conditions in urban slums were improved to benefit 9.1 million slum dwellers.

But the various employment generation programmes have failed to make any impact in solving the problem of rural and urban unemployment.

The Seventh Plan document reveals that the percentage of people below the poverty line diminished from 48.3 in 1977-78 to 36.9 in 1984-85. But the success appears to be partial for the Sixth Plan target was to take 18 per cent of people above the poverty line but only 11.4 per cent were so taken.

According to Dr Surendra J. Patel's estimates, there has been little reduction of inequalities of income and wealth over the last 35 years in India. First, the per capita consumption increased at only 0.6 per cent per year between 1950-85. It is so minuscule that it would make only a marginal difference to average per capita personal consumption. Second, there has been a backward movement in reduction of inequalities of income. The top 10 per cent had raised its relative share in personal income from around 40 per cent in 1950 to over 50 per cent in 1985, accumulating for itself over two-thirds of the entire increment in personal incomes. Finally, excluding public fixed capital formation, the top 10 per cent accounted for nearly all of the private capital formation in 1985, leaving the 90 per cent of population at the 1950 level.²

Thus empirical evidence shows that poverty, unemployment, and inequalities of income and wealth have increased instead of diminishing and that Indian Plans have failed to achieve social justice.

² Surendra J. Patel, Indian Economy-II—Reduction in Inequalities, 72 Times, 4 March 1986

of the year. Fourth, there is the Minimum Needs programme which aims at improving the consumption levels of the poorer sections in order to raise their productive efficiency. Lastly, the other measures for achieving social justice have been land reforms, abolition of bonded labour, liquidation of rural indebtedness, fixation of minimum wages for farm labour, drive against economic offenders and measures towards reduction of concentration of incomes, wealth and economic power.

Conclusion. But all the programmes discussed above have over the years achieved their objectives only partially. According to Government estimates, 40 per cent of the beneficiaries managed to increase their income above Rs 3,500 a year per family in 1984 alone. This amount being the 1979-80 poverty line per family. But this estimate is on current prices without making adjustment for the price rise since 1979-80. Dr Nilkanth Rath in his Dr T.A. Memorial Lecture said that less than 10 per cent of the poor against the 20 per cent target had been raised above the poverty line under the IRDP during the Sixth Plan without creating any durable community assets. But this was also a gross overestimate because it ignored the price rise and bank loan repayment during the Plan.

Therefore, the pace and manner in which the problem of social justice has been dealt with so far leaves much to be desired both qualitatively and quantitatively. Only a small fraction of the rural poor has been covered effectively by these poverty alleviation programmes. A sizeable portion of those covered have some land. The landless and the rural artisans have been almost left untouched.

In the area development programmes, little has been done in soil and water conservation, afforestation and pasture development. Agronomic practices and cropping patterns have not been introduced in backward regions. Marginal lands continue to be overexploited through crop husbandry. The emphasis of these poverty alleviation programmes is more on expenditure incurred than on performance. The constraints from which these programmes suffer have not been financial but organisational inadequacy and lack of clear cut plan of development and proper monitoring. Little attention has been paid to psychological, political, bureaucratic and economic forces that have been at work to foil these programmes.

The minimum needs programme did improve the living conditions of the poor in rural areas through the provision of protected and assured water supply to 1,92,000 villages with a drinking water problem, house sites to 5.4 million poor rural families, and assistance for house construction to 1.9 million of them by 1984-85. Environmental conditions in urban slums were improved to benefit 9.1 million slum dwellers.

But the record achievements notwithstanding, it is difficult to make an impact in solving the problem of social justice movement.

The Seventh Plan document reveals that the number of people below the poverty line decreased from 40.3 per cent in 1984-85. But the success appears to be partial as the Sixth Plan target was to take 15 per cent of people above the poverty line but only 11.4 per cent were so taken.

According to Dr Surendra J. Patel's estimates, there has been a little reduction of inequalities of income and wealth over the last 30 years in India. First, the per capita consumption increased at only 0.6 per cent per year between 1950-85. It is so minuscule that it would make only a marginal difference to average per capita personal consumption. Second, there has been a backward movement in reduction of inequalities of income. The top 10 per cent had raised its relative share in personal income from around 40 per cent in 1970 to over 48 per cent in 1985, accumulating for itself over two-thirds of the entire increment in personal incomes. Finally, excluding public fixed capital formation, the top 10 per cent accounted for nearly all of the private capital formation in 1985, leaving the 90 per cent of population at the 1970 level.²

Thus empirical evidence shows that poverty, unemployment, and inequalities of income and wealth have increased instead of diminishing and that Indian Plans have failed to achieve social justice.

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